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Aslib Book List



A MONTHLY LIST OF RECOMMENDED
SCIENTIFIC AND TECHNICAL BOOKS

with annotations

VOLUME 28 NUMBER 1

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ASLIB BOOK LIST VOL. 28 NO. 1 JANUARY 1963

Preface

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Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

Aslib is deeply appreciative of the services of those subject specialists and special librarians who examine and assess the books to be listed. Without their help it would be impossible to ensure that entries are up to date and that only books of high standard are included.

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VOLUME 28 . NUMBER 1 . JANUARY 1963

1 PHILOSOPHY

167 *Scientific Inquiry*

ACKOFF, R. L.

1

Scientific method: optimizing applied research decisions, by R. L. Ackoff with the collaboration of S. K. Gupta and J. S. Minas. NY, London, Wiley, [1962]. xii, 464p, tables, diags, bibliog. \$10.25; 72s.

B Account of various aspects of scientific method, with special reference to its application for clarifying and assisting in the taking of practical decisions, and the implications of this for the behaviour of the scientist.

3 SOCIAL SCIENCES

31 *Statistics*

WALSH, J. E.

2

Handbook of nonparametric statistics: investigation of randomness, moments, percentiles, and distributions. Princeton (NJ), London [etc], Van Nostrand, [1962]. Tables, diags, bibliog. \$15; 116s.

C First of two volumes forming reference book for important class of statistical techniques.

5 MATHEMATICAL AND NATURAL SCIENCES

51 *Mathematics*

BERLYAND, O. S. *and others*

3

Tables of integral error functions and hermite polynomials, by O. S. Berlyand, R. I. Gavrilova, and A. P. Prudnikov, tr. by P. Basu. Oxford, NY [etc], Pergamon P, 1962. 163p, tables, bibliog. 100s; \$12 *Mathematical tables series, vol. 19.*

C Large range of six-figure values for numerical solution of certain problems which occur in quantum mechanics, hydromechanics, and transport phenomena.

BOWMAN, F.

4

Introduction to determinants and matrices. EUP, 1962. ix, 162p, diags, bibliog. 17s 6d. *Applied mathematics series.*

B Gives students of applied mathematics excellent preparation for reading more advanced works. Worked examples and exercises with answers, but few practical applications.

EILON, S. *comp.*

5

Industrial engineering tables. London, Princeton (NJ) [etc], Van Nostrand, [1962]. viii, 232p, tables, diags. 48s.

D Collection of annotated tables not easily found, including tables of use in production and inventory control, work measurement, and quality control.

HALL, J. A. P. *ed.*

6

Computers in education: proceedings of a conference on 'The computing laboratory in the technical college' held at Hatfield College of Technology, [May 1960]. Oxford, NY, Pergamon P, 1962. xvi, 122p, tables, diags, bibliog. 2 gns; \$7.50. *International tracts in computer science and technology and their application, vol. 10.*

A Concise information and advice on training of mathematical technicians, and equipment and curricula required, revised to end of 1961.

52 Astronomy. Surveying. Geodesy

ARMITAGE, A.

7

William Herschel. London, Edinburgh [etc], Nelson, [1962]. xii, 158p, plates, diags, bibliog. 15s. *British men of science*.

A Well-documented elementary introduction to astronomical investigations and discoveries of Herschel, with short accounts of astronomical progress before and after him.

BOMFORD, G.

8

Geodesy. 2nd ed. Oxford, Clarendon P, 1962. xvi, 561p, tables, diags, bibliog. 90s.

C Specialist reference work including authoritative accounts of every aspect of geodesy. First edition 1952.

ROLLS, I. F.

9

About the universe. Mills & Boon, [1962]. xiv, 15-176p, plates, tables, diags, bibliog. 20s. *Science in society*, no. 4.

A Clearly written survey of modern knowledge concerning the nature, extent, and origin of the universe.

53 Physics and Mechanics

BRINK, D. M. and SATCHLER, G. R.

10

Angular momentum. Oxford, Clarendon P, 1962. viii, 134p, tables, diags, bibliog. 15s. *Oxford library of the physical sciences*.

C Describes recent developments in the quantum theory of angular momentum, with emphasis on application of this important theoretical tool to solution of problems in nuclear and atomic physics.

COLE, G. H. A.

11

Fluid dynamics: an introductory account of certain theoretical aspects involving low velocities and small amplitudes. London, Methuen; NY, Wiley, 1962. xiii, 238p, plate, diags, bibliog. 25s. *Methuen's monographs on physical subjects*.

B Introduction to theory of incompressible fluid flow using vector methods. Includes dimensionless parameters, boundary layers, and hydromagnetics in addition to the usual topics. For university physics and mathematics students.

SHERCLIFF, J. A.

12

Theory of electromagnetic flow-measurement. Cambridge, CUP, 1962. xi, 146p, tables, diags, bibliog. 27s 6d. *Cambridge engineering series*.

B Systematic and comprehensive account; much of the book will be of interest to those studying magnetohydrodynamics for its own sake or for its technological applications to devices other than flowmeters.

537 Electricity

BREESE, S. S. ed.

13

Electron microscopy: fifth international congress for electron microscopy held in Philadelphia, Pennsylvania, August 29th to September 5th 1962; NY, London, Academic P, 1962. Various paging. Illus, tables, diags, bibliog. 2v. \$20; 143s.

C Vol. 1, non-biology. Vol. 2, biology. Over 600 abbreviated but illustrated preprinted papers. Quality varies but rapid publication (three months) makes them of value. Type-writer script.

LYNTON, E. A.

14

Superconductivity. London, Methuen; NY, Wiley, 1962. ix, 174p, plate, tables, diags, bibliog. 21s. *Methuen's monographs on physical subjects*.

C Highly condensed survey of recent analytical theories and models used to interpret elec-

trical, magnetic, thermal, optical, and mechanical phenomena associated with superconducting state, with brief account of some recent applications of superconductors and full bibliography.

539.1 Nuclear Physics

CARO, D. E. *and others* 15

Modern physics: an introduction to atomic and nuclear physics, by D. E. Caro, J. A. McDonell, B. M. Spicer. Melbourne, F. W. Cheshire Pty; London, Edward Arnold, 1962. [9], 222p, illus, tables, diags, bibliog. 20s.

B Well-arranged introduction, bridging gap between sixth-form and university physics.

SUBE, R. 16

Dictionary of nuclear physics and technology: English, German, French, Russian. Oxford, NY [etc], Pergamon P; Berlin, VEB Verlag Technik, [1962]. 1606p. 400s; \$56.

D English edition differs only in dust-jacket, title-page, and two-page foreword from German edition, which is obtainable from continental booksellers at approximately £8. The book is in four sections with four language equivalents in each. No critical evaluation of terms.

WILLIAMS, I. R. *and* WILLIAMS, M. W. 17

Basic nuclear physics. Newnes, 1962. vii, 280p, plates, tables, diags, bibliog. 2 gns.

B Designed primarily as intensive course for people with only elementary knowledge of physics and mathematics who are going to work with isotopes.

54 Chemistry

AMERICAN CHEMICAL SOCIETY. Division of Inorganic Chemistry 18

Free radicals in inorganic chemistry: papers presented at the symposium on inorganic free radicals and free radicals in inorganic chemistry. . . 142nd meeting of the American Chemical Society, Atlantic City, NJ, September 10-12, 1962. Washington (DC), the Society, 1962. vi, 175p, tables, diags, bibliog. \$7. *Advances in chemistry series, no. 36.*

B-C English and American authorities survey a wide variety of free radicals, their properties, reactions, and the techniques used in their study.

CROSLAND, M. P. 19

Historical studies in the language of chemistry. London, Melbourne [etc], Heinemann, 1962. xvii, 406p, plates, tables, diags, bibliog. 50s. *Heinemann books on the history of science.*

B History of nomenclature of chemical substances from period of alchemy to end of nineteenth century.

PARTINGTON, J. R. 20

History of chemistry; vol. 3. London, Macmillan; NY, St Martin's P, 1962. xxiii, 854p, illus, tables, diags, bibliog. 6 gns.

B-C Second volume published of most authoritative history of chemistry now available. Covers mainly the eighteenth century.

543 Crystallography

INTERNATIONAL UNION OF CRYSTALLOGRAPHY 21

International tables for x-ray crystallography; vol. 3, physical and chemical tables, ed. by C. H. MacGillavry and G. D. Rieck, gen. ed. K. Lonsdale. Witton, Birmingham, Kynoch P, for the Union, 1962. xvi, 362p, tables, diags. 115s.

D Final volume of essential series for active research workers. Includes data on production and use of x-rays.

- JONA, F. and SHIRANE, G. 22
 Ferroelectric crystals. Oxford, NY [etc], Pergamon P, 1962. x, 402p, illus, tables, diags, bibliog. 4 gns. *International series of monographs on solid state physics*, vol. 1.

C Extensive review of both practical and theoretical work on the relation between physical properties and the atomic structure of the main classes of ferroelectrics represented by tri-glycine sulphate, KDP, barium titanate, perovskite-type oxides, Rochelle salt, sulphates, and others; written for research scientists by prominent contributors.

55 Geology. Meteorology

- BAILEY, E. 23
 Charles Lyell. London, Edinburgh [etc], Nelson, [1962]. x, 214p, illus, plates, diags. 15s. *British men of science*.

A-B Demonstrates significance of Lyell's contribution to geology and traces his progressive viewpoint throughout its development.

57 Anthropological and Biological Sciences

577.1 Biochemistry

- BALDWIN, E. 24
 Nature of biochemistry. Cambridge, CUP, 1962. xiii, 111p, tables, diags. 8s 6d.

B Introduction for school leavers, to be read rather than studied, including topics carefully selected and presented to give the feeling of the subject. Paperback.

58 Botany

- McKEE, H. S. 25
 Nitrogen metabolism in plants. Oxford, Clarendon P, 1962. [6], 728p, tables, bibliog. 5 gns.

D Comprehensive survey of present knowledge, with bibliography of over 220 pages.

- SINGER, R. 26
 Agaricales in modern taxonomy. 2nd ed. Weinheim, Cramer, 1962. vii, 915, [72]p, illus. DM120.

C First full treatment of the agaricales, to genus level, appeared in 1951 in *Lilloa* 22: 1-832. Its classification of this order of fungi has been widely approved and the revised edition includes modifications to make the grouping still more acceptable.

6 APPLIED SCIENCES

62 Engineering and Technology

- HALLIDAY, E. C. and MORRIS, B. P. 27
 Laboratory manual for engineering science. EUP, 1962. x, 102p, tables, diags. 8s 6d. *Technical college series*.

B Practical guide to forty experiments in electricity and magnetism and mechanics and heat, giving objectives, apparatus, principles, procedure, observations, conclusions, and discussion.

- HOLES, K. A. 28
 Experimental strength of materials (a laboratory manual). EUP, 1962. xii, 171p, illus, tables, diags. 21s. *Higher technical series*.

B Of value to teachers as well as to students of engineering.

- LAMBLE, J. H. ed. 29
 Principles and practice of non-destructive testing. Heywood, 1962. xviii, 238p, illus, tables, diags, bibliog. 55s.

B The scope of non-destructive testing is indicated and penetrant, radiographic, and ultra-sonic methods are detailed, the last two being particularly well treated.

621 Mechanical and Electrical Engineering

DUDLEY, D. W. *ed.* 30

Gear handbook: the design, manufacture and application of gears. NY, London [etc], McG-H, 1962. [955]p, illus, tables, diagrs, bibliog. \$23.50; 183s.

C Contains much valuable information on all types of gear. Some chapters have extensive bibliographies of predominantly American sources.

ENGINEERING EQUIPMENT USERS ASSOCIATION 31

Steam trapping and condensate removal. Constable, for the Association, [1962]. xi,96p, tables, diagrs. 30s. *EEUA handbooks, no. 8.*

B-C Practical guide to calculation of condensate formation and selection, use, and maintenance of equipment for its removal. Deals with special cases of condensate removal in addition to normal requirements.

GEARY, P. J. 32

Fluid film bearings: a survey of their design, construction and use. Chislehurst (Kent), British Scientific Instrument Research Association, 1962. 104, vii p, diagrs, bibliog. 25s.

C Explains liquid- and gas-lubricated bearings, with notes on squeeze films, the mercury globule bearing, and the acoustic radiation pressure bearing. Excludes hydrodynamically lubricated bearings.

SOCIETY OF AUTOMOTIVE ENGINEERS. Transmission Committee. 33

Design Standards Subcommittee

Design practices—passenger car automatic transmissions; part 1. NY, the Society; Oxford, Pergamon P, [1962]. iii,231p, illus, tables, diagrs. \$12; 90s. *Advances in engineering, vol. 1.*

C Increasing employment of automatic transmissions in road vehicles makes this book by leading American designers a timely reference for specialized information.

TUPLIN, W. A. 34

Gear design. Brighton, London, Machinery, [1962]. 333p, illus, plate, tables, diagrs, bibliog. 45s.

B Rational and highly practical method for efficient design of various forms of gear, with consideration of some aspects of their manufacture and use.

621.3 Electrical Engineering

DUMMER, G. W. A. and ROBERTSON, J. M. *eds* 35

British miniature and subminiature valves data annual 1962–63. Oxford, NY [etc], Pergamon P, 1962. xiv,921p, tables, diagrs. 200s; \$30.

D Photolitho reproduction of actual pages from electronic valve manufacturers' catalogues.

GIBBS, W. J. 36

Electric machine analysis using matrices. Pitman, 1962. vii,70p, diagrs, bibliog. 17s 6d.

B Concise account of the matrix method of analysis of the performance of ac and dc electrical rotating machines on a unified basis.

WISCHNITZER, S. 37

Introduction to electron microscopy. Oxford, NY [etc], Pergamon P, 1962. xi,132p, illus, tables, diagrs, bibliog. 2 gns; \$6.50.

B General principles and theory of electron microscope for investigators with limited background in physics and mathematics. Clear explanatory illustrations.

621.7 Workshop Practice

- BAINBRIDGE, C. G. 38
Teach yourself welding. EUP, 1962. ix, 182p, tables, diags, bibliog. 7s 6d. *Teach yourself books*.
B Brief practical information on all welding topics and sources of further information; for novices and those with a general interest in welding.
- REECE, H. W. 39
Engineering workshop experiments. Cleaver-Hume P, 1962. 181p, tables, diags, bibliog. 14s.
B Experiments in heat treatment, machine-shop practice, cutting and machinability, and workshop measurements. Adequate discussion of basic theory.
- SMITH, R. 40
Pattern development; book 1. Cassell, 1962. vii, 88p, diags. 12s 6d.
B Fairly comprehensive coverage, serving as text for students taking courses in sheet-metal or engineering drawing, and as reference for draughtsmen.

628 Public Health Engineering

- BLAKE, [E. H.] 41
Blake's Drainage and sanitation. 12th ed. rev. by S. Webster. Batsford, 1962. x, 444p, tables, diags. 25s.
B Introduction to skills and engineering services associated with buildings and their construction.
- NATIONAL PHYSICAL LABORATORY 42
Control of noise: proceedings of a conference held at the National Physical Laboratory on 26th, 27th and 28th June, 1961. HMSO, 1962. v, 434p, illus, tables, diags, bibliog. 32s 6d. *National Physical Laboratory symposium no. 12*.
B Important text and reference book for professional workers interested in nature, measurement, and control of noise in the home and at work, from scientific, technical, and administrative aspects. Typewriter script.

629.1 Transport Engineering

- PHILLIPS-BIRT, D. 43
Fore & aft sailing craft & the development of the modern yacht. Seeley, Service, 1962. Plates, tables, diags. 45s.
B Comprehensive work, from recent archaeological research into earliest origins of the rig to latest developments of the yacht. Good plans and photographs.
- PURSEY, H. J. 44
Merchant ship stability: a companion to *Merchant ship construction*. 3rd ed. Glasgow, Brown, Son & Ferguson, [1962]. x, 165p, tables, diags. 34s.
B New edition incorporates some new material and some rearrangement. Written primarily for ships' officers, but suitable also for students.

63 Agriculture. Forestry. Livestock. Fisheries

- BLAXTER, K. L. 45
Energy metabolism of ruminants. Hutchinson, 1962. 329p, plates, tables, diags, bibliog. 3 gns.
B-C Critical examination of existing methods of calculating rations for cattle, with new system based on fundamental studies of metabolism under varying conditions of age and environment in relation to the end-products, e.g. milk and meat.

- LAVERTON, S. 46
 Profitable use of farm chemicals. London, NY [etc], OUP, 1962. [9], 96p, illus, tables, diags, bibliog. 10s 6d.
B Practical guide to use of crop-protection chemicals in British agriculture, with full discussion of costs of treatment and of expected gains in yield and resultant profit.
- MENNINGER, E. A. 47
 Flowering trees of the world for tropics and warm climates, with a foreword by B. Y. Morrison. NY, Hearstside P, 1962. xv, 336p, illus, plates. \$18.95.
A Arranged by families in A-Z order. Scientific names and authorities are given with synonyms, followed by common names, lowest temperature at which tree has survived, native habitat, regions where cultivated, behaviour elsewhere, appearance at different seasons, with quotations from relevant regional botanical and horticultural literature. Index of scientific and popular names and index by special features. Plates in colour.
- SEIDEN, R. 48
 Livestock health encyclopaedia: the control of diseases and parasites in cattle, sheep and goats, swine, horses and mules, with explanation of veterinary, medical, pharmaceutical, chemical, and other scientific terms; based on official publications and other dependable sources by R. Seiden in association with W. J. Gough; foreword by R. R. Dykstra. 2nd ed. Leonard Hill, 1962. x, 628p, illus, tables, diags. 3 gns.
D Authoritative book in condensed form.
- 65 Business Techniques. Management**
- ROWBOTTOM, R. W. and GREENWALD, H. A. 49
 Understanding management, preface by R. W. Revans, gen. ed. H. A. Greenwald. Whitworth P, 1962. 161p, tables, diags. 10s 6d (paper); 21s (board).
A Description of more important general concepts and ideas involved in management.
- 66 Chemical Technology**
- ABRAHAM, H. 50
 Asphalts and allied substances: their occurrence, modes of production, uses in the arts, and methods of testing. 6th ed. in 5 vols; vol. 4, methods of testing: industrial raw bituminous materials. Princeton (NJ), London [etc], Van Nostrand, 1962. xiii, 434p, illus, tables, diags, bibliog. \$15; 115s.
C Review of sampling and test methods for examining bituminous substances. Chemical, physical and mechanical, and solubility tests are covered.
- BASHFORTH, G. R. 51
 Manufacture of iron and steel; vol. 4, the mechanical treatment of steel. C & H, 1962. viii, 276p, illus, tables, diags, bibliog. 45s.
B Comprehensive yet concise coverage of heating methods prior to working, the working processes themselves, and defects in steel products.
- KENT-JONES, D. W. and MITCHELL, E. F. 52
 Practice and science of bread-making. 3rd ed. Liverpool, Northern Publishing Co., 1962. [9], 312p, illus, plates, tables, diags. 50s.
B Practical book, brought up to date since 1951 edition (by D. W. Kent-Jones and J. Price).
- MACKENZIE, J. D. ed. 53
 Modern aspects of the vitreous state; vol. 2. Butterworths, 1962. vii, 260p, illus, plates, tables, diags, bibliog. 60s.
C Papers on diffusion in non-crystalline silicates; semiconductors in polymers; strength and fracture properties of glassy polymers; sources of weakness and the ultimate strength of brittle amorphous solids; ligand field theory and absorption spectra of transition metal ions in glasses.

STEWART, G. H. *ed.*

54

Science of ceramics; vol. 1, proceedings of a conference held at Oxford, 26-30 June, 1961, under the auspices of the British Ceramic Society and the Nederlandse Keramische Vereniging. London, NY, Academic P, for the Society, 1962. [5], 334p, illus, tables, diagrs, bibliog. 65s; \$11.50.

C Twenty-two papers (three in German) on fundamental problems ranging from those relating to clay minerals and conventional ceramics to the newer, highly specialized types.

67/68 Manufactures

FREEMAN, G. G.

55

Silicones: an introduction to their chemistry and applications. Iliffe, for the Plastics Institute, 1962. 8, 119p, plates, tables, diagrs, bibliog. 27s 6d.

B Elementary background to chemistry, preparation, and use of silicones. Revision of work previously published by the Institute for the use of its members.

GRIFF, A. L.

56

Plastics extrusion technology. NY, Reinhold; London, C & H, [1962]. ix, 278p, illus, tables, diagrs, bibliog. \$8; 64s. *Reinhold plastics applications series.*

B Introduction to process and applications of extrusion for wide readership, ranging from industrial workers to executives.

HILLIS, W. E. *ed.*

57

Wood extractives and their significance to the pulp and paper industries. NY, London, Academic P, 1962. xvii, 513p, illus, tables, diagrs, bibliog.

C Important addition to the literature on wood chemistry, dealing with chemistry, biochemistry, and technical importance of the extraneous components of wood.

681 Precision Mechanisms

BROTON, D. M.

58

Application of digital computers to structural engineering problems, with a foreword by W. Merchant. Spon, 1962. xvi, 183p, plate, tables, diagrs, bibliog. 57s 6d. *Spon's civil engineering series.*

C Introduction to terminology, numerical systems, and techniques involved in programming, intended to demonstrate the use of computers in structural engineering, but also of general application.

IVERSON, K. E.

59

A programming language. NY, London, Wiley, [1962]. xxi, 286p, tables, diagrs, bibliog. \$8.95; 68s.

B Detailed and systematic exposition of a notation for describing operations on sets of labelled items, as arise in computing and data-processing, with many examples of applications.

LANG, R. *comp.*

60

Laboratory and workshop notes 1959-1961: a sixth selection reprinted from the *Journal of Scientific Instruments*, compiled and ed. by R. Lang for the Institute of Physics and the Physical Society. Edward Arnold, 1962. xiii, 249p, illus, tables, diagrs. 45s.

B 127 practical notes on devices and techniques, of interest to laboratory workers.

MCCRACKEN, D. D.

61

Guide to IBM 1401 programming. NY, London, Wiley, [1962]. viii, 199p, illus, tables, diagrs, bibliog. \$5.75; 44s.

A-B Basic principles for readers with no experience in using computers or punched cards. Reprinted from *Principles of programming*, sections 1-12, IBM Corporation, 1961.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
McG-H	McGraw-Hill
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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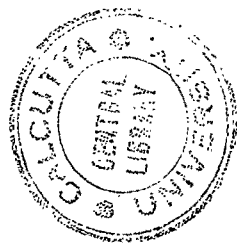
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ASLIB BOOK LIST VOL. 28 NO. 2 FEBRUARY 1963

Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

Aslib is deeply appreciative of the services of those subject specialists and special librarians who examine and assess the books to be listed. Without their help it would be impossible to ensure that entries are up to date and that only books of high standard are included.

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VOLUME 28 . NUMBER 2 . FEBRUARY 1963

3 SOCIAL SCIENCES

- HERBST, P. G. 62
Autonomous group functioning: an exploration in behaviour theory and measurement. Tavistock Publications, 1962. xiii, 271p, tables, diags, bibliog. 36s.
C Basic human research in British industry is a rarity; this book adds considerably to our knowledge by presenting an intensive case study in group behaviour.

5 MATHEMATICS AND NATURAL SCIENCES

- ARCHER, M. 63
Natural history drawings in the India Office library. HMSO, for Commonwealth Relations Office, 1962. ix, 116p, illus, plates, bibliog. 27s 6d.
D Catalogue, with historical introduction, of the India Museum, Marquis Wellesley, MacKenzie, Buchanan de Jonville, Roxburgh, etc., collections of drawings in the library.
- ENGELHARDT, W. *ed.* 64
Survival of the free: the last strongholds of wild animal life, tr. from the German by J. Coombs. Hamish Hamilton, 1962. xiv, 258p, illus, plates, tables, diags. 30s.
A Papers by various experts on animal conservation.

51 Mathematics

- COX, D. R. 65
Renewal theory. London, Methuen; NY, Wiley, 1962. ix, 142p, tables, diags, bibliog. 21s. *Methuen's monographs on applied probability and statistics.*
B-C Introduction for those who already have a good knowledge of probability theory.
- HEADING, J. 66
Introduction to phase-integral methods. London, Methuen; NY, Wiley, 1962. [6], 160p, table, diags, bibliog. 21s. *Methuen's monographs on physical subjects.*
C Pioneer general introduction to approximation methods, usually known as WKBJ solutions, of second-order linear differential equations with variable coefficients, and their application to physical problems.
- HELGASON, S. 67
Differential geometry and symmetric spaces. NY, London, Academic P, 1962. xiv, 486p, bibliog. \$12.50; 89s 6d. *Pure and applied mathematics: a series of monographs and textbooks, vol. 12.*
C Pure mathematics text providing a self-contained introduction to Cartan's theory of symmetric spaces and to more recent developments in the theory of functions thereon.
- VEKUA, I. N. 68
Generalized analytic functions, [tr. from the Russian], tr. ed. by I. N. Sneddon. Oxford, NY [etc], Pergamon P, 1962. xxix, 668p, diags, bibliog. 5 gns; \$15. *International series of monographs on pure and applied mathematics, vol. 25.*
C The functions discussed satisfy a generalized form of the Cauchy-Riemann equations; the basic theory is expounded and then applied to boundary value problems, the geometry of surfaces, and the theory of elastic shells. Published Moscow 1959.

52 Astronomy. Surveying. Geodesy

ABETTI, G.

69

Solar research, [tr. from the Italian]. Eyre & Spottiswoode, 1962. 173p, plates, tables, diagrs, bibliog. 18s. *Survey of astronomy*, 4.

B Non-mathematical introduction to solar physics for the serious student; describes theories and processes underlying observational data. Written for this series by former Director of the Astrophysical Observatory in Florence.

LOVELL, B.

70

Exploration of outer space. OUP, 1962. ix, 87p, plates, diagrs. 16s.

A Four lectures on radio and space-probe techniques and their application to astronomy and cosmology, and a chapter on the dangers of space contamination.

53 Physics

ATKIN, R. H.

71

Theoretical electromagnetism. London, Melbourne [etc], Heinemann, 1962. vii, 260p, tables, diagrs. 30s.

B-C Mathematical analysis of electrostatics, magnetostatics, current flow in networks, electromagnetism, ac theory, Maxwell's field equations, and relativity. Mainly remarkable for large number of worked examples and exercises. Many typographical errors.

INSTITUTE OF PHYSICS AND THE PHYSICAL SOCIETY

72

Reports on progress in physics, ed. by A. C. Stickland; vol. 25 (1962). The Institute of Physics and the Physical Society, 1962. [4], 529p, illus, plates, tables, diagrs, bibliog. 4 gns (21s to members); separate articles available at 7s 6d each (5s to members).

C Authoritative reviews for postgraduate and research physicists with interests in nuclear reactions, the Mössbauer effect, theoretical magnetohydrodynamics, cryotons, upper atmosphere and solar research using satellites and rockets, diffraction by liquids, cohesion in metals, and health physics.

NUFFIELD FOUNDATION UNIT FOR THE HISTORY OF IDEAS

73

Quanta and reality: a symposium. Hutchinson, 1962. 96p, plates. 18s.

B Appraisal by experts of fundamental microphysical and philosophical implications and interpretations of contemporary quantum mechanics. Based on BBC series.

537 Electricity

TSIDIL'KOVSKII, I. M.

74

Thermomagnetic effects in semiconductors, tr. from the Russian by A. Tybulewicz, ed. by H. J. Goldsmid. Infosearch, distrib. outside the USA by Cleaver-Hume P, [1962]. viii, 333p, tables, diagrs, bibliog. 3 gns.

C Covers fundamental definitions and the general transport theory of both adiabatic and isothermal effects, and provides comprehensive analysis of experimental results for a wide range of elemental and compound semiconductors. Typewriter script. Published Moscow 1960.

54 Chemistry

GEISSMAN, T. A.

75

Principles of organic chemistry. 2nd ed. San Francisco, London, Freeman, [1962]. x, 854p, tables, diagrs. 35s. *Series of chemistry books*.

B Good introduction for university students, with three new chapters.

- MACKENZIE, C. A. 76
 Unified organic chemistry. NY, Harper; [London, Hamish Hamilton], [1962].
 vii, 586p, illus, tables, diags. \$8.50; 60s.
B Textbook suitable for first-year undergraduates, arranged in an unusual way.

55 Geology. Meteorology

- GREAT BRITAIN. Meteorological Office 77
 Course in elementary meteorology, [by D. E. Pedgley]. HMSO, 1962. xii, 189p,
 plates, tables, diags, bibliog. 17s 6d.
A Descriptive, non-mathematical study of weather phenomena, leading to synoptic meteorology. Replaces W. H. Pick's *Short course in elementary meteorology*. For weather observers.
- GREAT BRITAIN. Overseas Geological Survey. *Mineral Resources Division* 78
 Bauxite, alumina and aluminium, by S. Bracewell with the assistance of the
 statistical and indexing sections of the Mineral Resources Division. HMSO,
 1962. v, 235p, plates, tables, bibliog. 15s.
A Comprehensive monograph on the distribution and resources of these ores.
- INTERNATIONAL SOCIETY OF BIOMETEOROLOGY 79
 Biometeorology: proceedings of the second international bioclimatological
 congress held at the Royal Society of Medicine, London, 4-10 Sept. 1960, ed.
 by S. W. Tromp. Oxford, NY [etc], Pergamon P, 1962. xxxii, 687p, illus, tables,
 diags, bibliog. 140s; \$25.
C Seventy-two papers or abstracts, the themes including tropical bioclimatology, meteorological forecasting, thermoregulation in man and animals, phytological bioclimatology. Contributions and summaries in English, French, and German.
- MASON, B. J. 80
 Clouds, rain and rainmaking. Cambridge, CUP, 1962. [5], 145p, plates, tables,
 diags. 13s 6d.
B Concise up-to-date account, with critical assessments of recent researches into formation of clouds and development of rain, snow, and hail within them. Paperback.
- PARASNIS, D. S. 81
 Principles of applied geophysics. London, Methuen; NY, Wiley, 1962. vii, 176p,
 tables, diags, bibliog. 21s. *Methuen's monographs on physical subjects*.
B General up-to-date account of methods of geophysical prospecting, for physics students.
- READ, H. H. and WATSON, J. 82
 Introduction to geology; vol. 1, principles. London, Macmillan; NY, St Martin's P, 1962. x, 693p, illus, tables, diags, bibliog. 65s.
B Lucid and thought-provoking introduction supplying needed text for British universities.
- SIEGEL, B. J. ed. 83
 Biennial review of anthropology, 1961. Stanford (Cal.), Stanford UP; [London, OUP], 1962. [7], 338p, bibliog. \$7.50; 60s.
C This second volume of reviews on current research includes over 1,700 references and a special review of current Japanese work. No author index.

58 Botany

- HYDE, H. A. and WADE, A. E. 84
 Welsh ferns: a descriptive handbook. 4th ed. Cardiff, National Museum of
 Wales, 1962. ix, 122p, illus, plates, diags, bibliog. 15s.
C This remains, apart from P. Taylor's *British ferns and mosses* in the Kew Series, the only fully descriptive flora to appear this century covering all ferns native to the British Isles.

- NELSON, A. 85
Introductory botany. 2nd ed. Edinburgh, London, Livingstone, 1962. viii, 479p, illus, tables, diagrs. 30s.
A The many specialist sciences that constitute the student's usual conception of pure botany (there is no applied or economic section) are briefly described and put into their correct perspective.

59 Zoology

- DADE, H. A. 86
Anatomy and dissection of the honeybee. Bee Research Association, 1962. xi, 158p, illus, plates, tables, diagrs. 30s.
A Aims to fill long-felt want as a guide to practical work with necessary systematic anatomical background.
- YOUNG, J. Z. 87
Life of vertebrates. 2nd ed. Oxford, Clarendon P, 1962. xvi, 820p, illus, tables, diagrs, bibliog. 70s.
B Completely revised edition incorporating the researches and some of the changes of emphasis in the study of vertebrates made during the last decade. First edition 1950.

6 APPLIED SCIENCES

62 Engineering and Technology

621 Mechanical and Electrical Engineering

- FRANCIS, W. 88
Boiler house and power station chemistry. 4th ed. Edward Arnold, 1962. xii, 435p, illus, tables, diagrs, bibliog. 70s.
B-C Considerably revised edition of a standard work which is an indispensable tool for power station chemists and engineers, for practising fuel technologists, and aspiring students.
- KUO, B. C. 89
Automatic control systems. Prentice-Hall, [1962]. xii, 504p, tables, diagrs. 4 gns.
Electrical engineering series.
B Gives fairly orthodox course on servomechanism design using Nyquist, Bode, Nichols, root locus, etc., including sampled-data systems and the z-transform and ending with the phase plane and describing function.
- MACMILLAN, R. H. and others, eds 90
Progress in control engineering; vol. 1, general ed. R. H. Macmillan, American ed. T. J. Higgins, European ed. P. Naslin. Heywood, 1962. vii, 260p, tables, diagrs, bibliog. 3 gns.
C Intended to bridge gap between introductory textbooks and articles in specialized journals. Describes current thinking on variety of control engineering topics.

621.039 NUCLEAR ENGINEERING

- RUSSELL, C. R. 91
Reactor safeguards. Oxford, NY [etc], Pergamon P, 1962. ix, 390p, illus, tables, diagrs, bibliog. 80s; \$15. *International series of monographs on nuclear energy. Division 11: reactor operational problems, vol. 1.*
B Compilation from mainly American sources. Sections on radioactive materials, reactor kinetics, control and safety systems, containment, and extent of possible damage; and review of reactor accidents.

UNITED STATES ATOMIC ENERGY COMMISSION

92

Reactor handbook. 2nd ed. NY, London, Interscience, 1962.

C Vol. 3, part A, physics, ed. by H. Soodak. [13], 313p, illus, tables, diags, bibliog. \$10.75; 81s. Vol. 3, part B, shielding, ed. by E. P. Blizard and L. S. Abbott. [15], 287p, illus, tables, diags, bibliog. \$9; 63s. Substantial revision of 1955 editions, although in the case of part A the revision is said to have been completed in 1957. Essential for all libraries concerned.

621.3 Electrical Engineering

FORREST, J. S. and others, eds

93

Gas discharges and the electricity supply industry: proceedings of the international conference held at the Central Electricity Research Laboratories, Leatherhead, Surrey, England, 7th-11th May 1962, ed. by J. S. Forrest, P. R. Howard, and D. J. Littler. Butterworths, 1962. xvi, 677p, illus, tables, diags, bibliog. 8 gns.

C Fifty-four papers with discussions.

VOLK, M. C. and others

94

Electrical encapsulation, by M. C. Volk, J. W. Lefforge, and R. Stetson. NY, Reinhold; London, C & H, [1962]. [10], 228p, illus, tables, diags, bibliog. \$8; 64s.

C Describes materials, processes, and case histories for encasing electrical components and apparatus in protective dielectrics and ceramics.

VON ALVEN, W. H. ed.

95

Semiconductor reliability; vol. 2, based on the conference on reliability assurance techniques for semiconductor specifications, October 1961, Washington (DC). NY, Reinhold; London, C & H, [1962]. xvi, 400p, illus, tables, diags, bibliog. \$12; 96s.

C Practical work on materials and devices, discussing data analysis, reduction of failure rates, engineering evaluation, sampling, and reliability assurance in new specifications.

621.4 Internal Combustion Engines

SOCIETY OF AUTOMOTIVE ENGINEERS, Powerplant Activity Committee

96

Centrifugal compressors: [papers of] 1961 Gas Turbine Subcommittee. NY, the Society, 1961; [London, etc, Pergamon P, 1962]. [2], 80p, illus, table, diags, bibliog. 50s. *Technical progress series*, vol. 3.

C Consideration from scientific standpoint of some design problems, and chronological description of a typical development programme.

621.7 Workshop Practice

PATON, B. E. ed.

97

Electroslag welding. 2nd ed., tr. from the Russian. NY, American Welding Society, distributed by Reinhold; [London, C & H], [1962]. x, 468p, illus, tables, diags, bibliog. \$12; 96s.

C Only full treatment of the technology of electroslag welding, written by the Director of the Institute of Welding in Kiev, where most of the early development work on the process originated. Published Moscow 1959.

SIMONS, E. N.

98

Surface treatment of steel. Pitman, 1962. ix, 234p, illus, tables, diags. 35s.

B Covers such little-discussed treatments as cleaning of steel by blast, solution, vapour, salt bath, shot peening, hydro-blasting, and tumbling, and many other methods of surface treatment.

624 Structural Engineering

CZERNIN, W.

99

Cement chemistry and physics for civil engineers, [tr. from the German]. Crosby Lockwood, 1962. ix, 139p, illus, tables, diags. 25s.

C Well-translated work for civil engineers interested in the basic properties of cement.

MAJOR, A.

100

Vibration analysis and design of foundations for machines and turbines: dynamical problems in civil engineering, [tr. from the German]. London, Collet's; Budapest, Akademiai Kiado, 1962. 828p, illus, tables, diags, bibliog. 5 gns.

C Comprehensive treatise on vibration problems of machine foundations, covering basic theoretical aspects and describing practical engineering problems in detail.

STEWART, D. A.

101

Design and placing of high quality concrete. 2nd ed. Spon, 1962. xi, 162p, illus, plates, tables, diags. 50s. *Spon's civil engineering series*.

B Describes methods of obtaining high-strength concrete of the highest possible density, including mix design, shuttering, placing, and compaction. For students and engineers. First edition 1951.

625 Railway and Highway Engineering

DOHERTY, J. M.

102

Diesel locomotive practice: the design, construction, operation and maintenance of locomotives and railcars, with a foreword by J. F. Harrison. Odhams P, 1962. 256p, illus, tables, diags. 30s.

B Review of current practice for railwaymen, particularly operating staff, and others needing knowledge of principles and construction rather than of engineering design.

628 Public Health Engineering

BARTON, J. J.

103

Estimating for heating and ventilating. Newnes, 1962. [7], 216p, illus, tables, diags. 2 gns.

B

629.1 Transport Engineering

JACKSON, A. J.

104

De Havilland aircraft since 1915. Putnam, [1962]. 491p, illus, plate, tables, diags. 3 gns.

A Covers in detail all de Havilland military and civil aircraft.

SWANBOROUGH, F. G.

105

Turbine-engined airliners of the world. Temple P, 1962. [6], 130p, illus, diags. 25s.

D Illustrates and catalogues thirty jet and prop-jet airliners now or shortly in scheduled service, and reviews eighteen manufacturers of eight nations with design history, data, and production records.

63 Agriculture. Forestry. Livestock. Fisheries

BOWDEN, W. E.

106

Beef breeding, production and marketing, with contributions by W. M. Brownlie and others. Land Books, 1962. 448p, illus, plate, tables, diags, bibliog. 50s.

B Deals with beef from production to consumption, incorporating all new methods which are being adopted in various parts of the country.

- COOK, A. H. *ed.* 107
Barley and malt: biology, biochemistry, technology. NY, London, Academic P, 1962. xiv, 740p, illus, tables, diags, bibliog. \$21; 150s.

C Authoritative and up-to-date articles covering morphology, breeding, variety identification, and diseases; also production, evaluation, structure, and analysis of seed. Further sections on malt analysis and enzymes, and the malting process. Well referenced.

- DAVIS, R. F. 108
Modern dairy cattle management. Englewood Cliffs (NJ), Prentice-Hall, 1962. vi, 264p, illus. \$6.65.

B Designed to present fundamental aspects of dairy industry and to give most effective techniques as established by research information.

- FRASER, A. 109
Breeder & boffin. Crosby Lockwood, 1962. viii, 88p. 9s 6d.

A Discusses respective merits of the commercial breeder's and applied geneticist's approach to breeding of farm animals under modern conditions in which artificial insemination is increasingly important.

65 Business Techniques. Management. Communication. Transport

- BRIERLEY, J. 110
Parking of motor vehicles. CR Books, 1962. xxii, 306p, illus, tables, diags, bibliog. 55s.

A-B Fills a gap in traffic engineering literature by covering all aspects of the parking problem and the provision of parking facilities, with special reference to the UK.

- MEISELS, K. 111
Primer of linear programming. [NY, New York UP]; London, Glasgow, Blackie, 1962. x, 103p, tables, diags, bibliog. 26s.

B Introduction to basic techniques, for the intelligent manager with little or no mathematical background.

66 Chemical Technology

- ANDERSEN, A. J. C. 112
Refining of oils and fats for edible purposes. 2nd ed. by P. N. Williams. Oxford, London, Pergamon P, 1962. xv, 247p, illus, plates, tables, diags, bibliog. 60s.

B Describes latest plant and processes. Emphasis on importance of minute traces of impurities and of metals in determining quality, taste, and keeping properties. Previous edition 1953.

- GORE, T. S. *and others, eds* 113
Recent progress in the chemistry of natural and synthetic colouring matters and related fields. NY, London, Academic P, 1962. xxvii, 659p, plate, tables, diags, bibliog. \$24; 171s 6d.

C Valuable papers made more valuable by extensive references to the original literature.

- INSTITUTION OF METALLURGISTS 114
Purer metals: lectures delivered at the Institution . . . refresher course, 1961. Iliffe, for the Institution, 1962. 7, 113p, plates, tables, diags, bibliog. 35s.

B Considers methods of producing purer metals, effect of trace impurities on properties of pure metals, and reasons for demand for increased purity in various industries.

- OIL AND COLOUR CHEMISTS' ASSOCIATION 115
Convertible coatings. C & H, for the Association, 1962. 318p, illus, tables, diags, bibliog. 35s. *Paint technology manuals, part 3.*

B For paint technology examinations of the City and Guilds of London Institute.

- WILKINSON, W. D. 116
Uranium metallurgy; vol. 1, uranium process metallurgy. NY, London, Wiley, 1962. xvii, 755p, illus, tables, diags, bibliog. \$18; 135s.

B First of two volumes intended to be comprehensive review of uranium process metallurgy, corrosion, and alloys. Sections on ore processing, reduction, purification, fabrication, powder metallurgy, reprocessing, safe practice. Reference book for engineers, metallurgists, and administrators.

67/68 Manufactures

- MARSH, J. T. 117
Self-smoothing fabrics. C & H, 1962. x, 399p, plates, tables, diags. 70s.

C Deals mainly with structure and properties of cellulosic fibres, and effect of resin finishes on them, from a chemist's point of view.

- MCKELVEY, J. M. 118
Polymer processing. NY, London, Wiley, [1962]. xiii, 409p, illus, tables, diags, bibliog. \$10.25; 77s.

C Shows how fundamental material in fluid mechanics, rheology (including non-Newtonian flow and viscoelasticity), heat transfer, thermodynamics, and polymer chemistry and physics is related directly to process engineering applications: moulding, extrusion, blending, and calendering. Approach is mathematical and analytical rather than descriptive.

- MORTON, W. E. and HEARLE, J. W. S. 119
Physical properties of textile fibres. Manchester, Textile Institute; London, Butterworths, 1962. xxi, 608p, illus, tables, diags, bibliog. 5 gns.

B Textbook for students of fibre physics, covering fibre structure and dimensions, moisture relations, mechanical and electrical properties, and other properties (optical, thermal, and fibre friction).

- MORTON, W. E. and WRAY, G. R. 120
Introduction to the study of spinning. 3rd ed. Longmans, 1962. viii, 277p, illus, tables, diags. 40s.

B Standard introductory text on textile fibres and spinning processes, revised to include new material on man-made fibres and yarn manufacturing techniques. Previous edition, by Morton alone, 1949.

- TYRE RESEARCH INSTITUTE 121
Physico-mechanical testing of unvulcanised and vulcanised rubber, tr. from *Trudy Nauchno-Issledovatel'skogo Instituta Shinnoi Promyshlennosti* (Transactions of the Tyre Research Institute), Sbornik 7, Moscow, 1960, by R. J. Moseley, R. A. Amos, J. R. Scott. MacLaren, [1962]. [4], 152p, tables, diags, bibliog. 45s.

C For specialists and rubber technologists. Contains new recommendations on low-temperature resistance thermal stability (to 300°C) and resistance to ageing. Glossary of technical terms which may not be familiar outside the USSR.

69 Building Industry

- OSBORNE, A. L. 122
Timber in building. Batsford, 1962. ix, 149p, illus, tables. 35s.

B Introduction to architectural use of timber in structures, joinery, and flooring.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
McG-H	McGraw-Hill
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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ASLIB BOOK LIST

VOL. 28

NO. 3

MARCH 1963

Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

Aslib is deeply appreciative of the services of those subject specialists and special librarians who examine and assess the books to be listed. Without their help it would be impossible to ensure that entries are up to date and that only books of high standard are included.

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Aslib Book List

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0 SCIENCE AND KNOWLEDGE

001 General Knowledge

- MINNESOTA CENTER FOR THE PHILOSOPHY OF SCIENCE 123
Scientific explanation, space, and time, ed. by H. Feigl and G. Maxwell.
Minneapolis (Md), Minnesota UP; [London, OUP], [1962]. xv, 628p, diags,
bibliog. \$8.50; 68s. *Minnesota studies in the philosophy of science, vol. 3.*
C Exceptionally valuable collection of original papers on problems in the logic of scientific
theories, including the nature of theoretical entities and explanation.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- ALLEN, R. G. D. 124
Basic mathematics. London, Macmillan; NY, St Martin's P, 1962. xii, 512p,
tables, diags, 35s.
B Broad survey of modern mathematical methods for students who need mathematics as
an ancillary to their main studies.
- FULLER, L. E. 125
Basic matrix theory. Englewood Cliffs (NJ); [London], Prentice-Hall, 1962.
ix, 245p, tables, diags, bibliog. \$7.50; 56s. *Prentice-Hall mathematics series.*
B Practical guide to procedure in use of matrices, covering properties, operations, trans-
formations, inversion, and forms. Provides problems and answers.
- KILMISTER, C. W. and TUPPER, B. O. J. 126
Eddington's statistical theory. Oxford, Clarendon P, 1962. [7], 115p, tables,
diags, bibliog. 21s. *Oxford mathematical monographs.*
C Intended to clarify the statistical part of Eddington's Fundamental Theory, in which he
calculated certain constants of nature.
- KNEEBONE, G. T. 127
Mathematical logic and the foundations of mathematics: an introductory
survey. London, Princeton (NJ) [etc], Van Nostrand, [1963]. xiv, 435p, tables,
diags, bibliog. 65s.
B Clearly written self-contained book based on courses of lectures given in the University
of London, for general readers and students who require an authoritative introduction
to the subject and its literature.
- LANDAU, L. D. and LIFSHITZ, E. M. 128
Classical theory of fields. 2nd ed, tr. from the Russian by M. Hamermesh.
Oxford, Paris [etc], Pergamon P; Reading (Mass), Addison-Wesley, 1962.
ix, 404p, diags. 80s; \$12.50. *Course of theoretical physics, vol. 2.*
C Extensively revised, with new final chapter on cosmological problems. First English edi-
tion 1951.
- PARS, L. A. 129
Introduction to the calculus of variations. London, Melbourne [etc], Heine-
mann, 1962. xi, 350p, diags, bibliog. 45s.
C Clear and authoritative text of honours degree and postgraduate standard, dealing with
main classical problems and including chapter on Dirichlet's principle.

- SMITH, G. D. 130
Vector analysis including the dynamics of a rigid body. London, NY [etc], OUP, 1962. viii, 192p, diags. 25s. *Oxford mathematical handbooks*.

B Practical text on vectors, vector calculus, and vector analysis for students and practising engineers and scientists. Worked examples and exercises with answers.

- THOMAS, T. L. and THOMAS, A. 131
Mathematics by calculating machine. Cassell, 1962. xiii, 245p, plates, tables, diags. 21s.

A Detailed instruction book for the application of desk calculating machines to a wide variety of arithmetical problems, for teaching at various levels.

- TROPPER, A. M. 132
Matrix theory for electrical engineering students. London, Toronto [etc], Harrap, 1962. 100p, diags, bibliog. 12s 6d. *Engineering science monographs*, no. 1.

B Elementary account of the principal topics of matrix algebra with applications to simple conventional electric circuits. Provides problems with answers.

53 Physics

- BIRKS, J. B. ed. 133
Rutherford at Manchester. Heywood, 1962 [i.e. Jan. 1963]. x, 364p, plates, tables, diags, bibliog. 60s.

A Describes Rutherford's life and work at Victoria University, Manchester (1907 to 1919), and includes speeches delivered at the 1961 jubilee international conference, memorial lectures, nine scientific papers by Rutherford and his colleagues, a bibliography of their publications during the Manchester period, and a bibliography of Rutherford's works.

- CAIANIELLO, E. R. ed. 134
Lectures on the many-body problem. NY, London, Academic P, 1962. xii, 344p, diags, bibliog. \$10.50; 4 gns.

C Lectures given by eminent theoretical physicists at the second international spring school of physics at the University of Naples. Mainly concerned with the theory of Fermi gases.

- CHACE, W. G. and MOORE, H. K. eds 135
Exploding wires; vol. 2, proceedings of the second conference on the exploding wire phenomenon, held at Boston, November 13-15, 1961, under the sponsorship of the Geophysics Research Directorate, Air Force Cambridge Research Laboratories, Office of Aerospace Research, with the cooperation of the Lowell Technological Institute Research Foundation. NY, Plenum P, 1962. [6], 321p, illus, plate, tables, diags, bibliog. \$10.50.

C Includes exploding wire shock waves, extreme temperatures, x-rays, high pressures, instrumentation problems, applications, and exploding foils. Mainly for research workers.

- KURSUNOGLU, B. 136
Modern quantum theory. San Francisco, London, Freeman, [1962]. xv, 518p, diags. \$14; 100s. *Series of books in physics*.

B-C Graduate course with a mathematically modern approach, covering basic transformation theory, angular momentum and the rotation group, symmetry principles, Dirac's wave equation, perturbation, scattering, many-particle systems, and the properties of elementary particles.

- LAWDEN, D. F. 137
Introduction to tensor calculus and relativity. London, Methuen; NY, Wiley, 1962. xii, 172p, diags, bibliog. 25s. *Methuen's monographs on physical subjects*.

B Discusses special relativity in relation to Newton's laws and Maxwell's equations and proceeds to basic ideas of the general theory via tensor calculus.

- MARCLEY, R. G. 138
Apparatus drawings project; sponsored jointly by the American Association of Physics Teachers and the American Institute of Physics under grants from the National Science Foundation. NY, Plenum P, 1962. [9], 289p, illus, tables, diags, bibliog. \$40.
B Complete information, including detailed workshop drawings, for construction of thirty pieces of apparatus for physics laboratory use and lecture demonstrations.

539.1 Nuclear Physics

- RAMAKRISHNAN, A. 139
Elementary particles and cosmic rays. Oxford, NY [etc], Pergamon P, 1962. xvi, 567p, tables, diags, refs. 100s; \$15.
C Mathematical physics account of elementary particles, in which their interactions are described through cosmic ray phenomena.
- SLATER, D. N. 140
Gamma-ray radionuclides in order of increasing energy. Butterworths, 1962. viii, 201p, tables, bibliog. 45s.
D Re-arrangement of tabulations published in *Reviews of Modern Physics*, April 1958, listing energies and other nuclear data of gamma-emitting nuclides. Of use to physicists and chemists concerned with identification and elucidation of gamma-ray spectra.
- STEVENS, B. 141
Atomic structure and valency: for general students of chemistry. C & H, 1962. vii, 103p, tables, diags. 12s 6d. *Physical chemistry textbooks*.
B Conveys much information concisely, with emphasis on theory and formal presentation rather than on experiment.

54 Chemistry

- AMERICAN CARBON COMMITTEE and PENNSYLVANIA STATE UNIVERSITY 142
Proceedings of the fifth conference on carbon held at the Pennsylvania State University, University Park, Pennsylvania [June 1961]; vol. 1. NY, Oxford [etc], Pergamon P, 1962. xii, 639p, plate, illus, tables, diags. \$20; 140s.
C Seventy papers ranging from electronic and structural theory to industrial practice.
- BUSEV, A. I. 143
Analytical chemistry of indium, tr. from the Russian by J. T. Greaves. Oxford, NY [etc], Pergamon P, 1962. xvi, 288p, tables, diags, bibliog. 4 gns; \$12.50. *International series of monographs on analytical chemistry*, vol. 5.
C Collection from Russian and western sources up to 1957 of methods of detecting, separating, and determining indium, with some critical comment and 476 references. Published Moscow 1958.
- DEER, W. A. and others 144
Rock-forming minerals; vol. 2, chain silicates, by W. A. Deer, R. A. Howie, and J. Zussman. Longmans, 1963. ix, 379p, tables, diags, bibliog. 95s.
C Critical synthesis of literature, mostly recent, on structure, chemistry, optical and physical properties, and formation of amphiboles and pyroxenes, emphasizing correlations between physical and chemical properties and occurrence.

- MINKOFF, G. J. and TIPPER, C. G. H. 145
Chemistry of combustion reactions. Butterworths, 1962. xii, 393p, plates, tables, diags, bibliog. 75s.

C Valuable addition to the literature, covering whole range of theory and experiment for the combustion reactions of gaseous fuels.

- MORTIMER, C. T. 146
Reaction heats and bond strengths: based on a series of lectures given to post-graduate students at the University of Keele, 1960. Oxford, NY [etc], Pergamon P, 1962. xii, 230p, tables, diags, bibliog. 35s; \$6.50.

B-C Account of modern thermochemistry and the evidence it is providing about bond strengths and interactions in organic and certain inorganic molecules, about the energies associated with certain reactions, and about the stability of addition compounds and of free radicals.

- YOUNG, D. M. and CROWELL, A. D. 147
Physical adsorption of gases. Butterworths, 1962. xi, 426p, tables, diags, bibliog. 70s.

C Authoritative account of the adsorption process and the theoretical and experimental methods by which it is studied, with special reference to progress since 1930. Fully indexed.

55 Geology. Meteorology

- BATTAN, L. J. 148
Radar observes the weather. [Toronto, Doubleday]; London, Melbourne [etc], Heinemann, 1962. 158p, plates, diags, bibliog. 95c; 5s. *Science study series*, no. 18.

A Explains briefly the principles of radar and how it can be used to detect water droplets and ice particles, so distinguishing various types of precipitation clouds. Also shows how weather radar sets in aircraft can assist pilots.

- BEUS, A. A. 149
Beryllium: evaluation of deposits during prospecting and exploratory work, by A. A. Beus, ed. by L. R. Page, tr. [from the Russian] by F. Lachman, preliminary editing by R. K. Harrison. San Francisco, London, Freeman, [1962]. x, 161p, tables, diags, bibliog. \$5; 36s. *Geology series*.

C Invaluable to all concerned with the production of this rare but vital element, as no comparable work exists.

- HAWKES, H. E. and WEBB, J. S. 150
Geochemistry in mineral exploration. NY, Harper; [London, Hamish Hamilton], [1962]. xiv, 415p, tables, diags, bibliog. \$12.50; 100s. *Harper's geoscience series*.

B Comprehensive account by leading authorities. All methods of geochemical prospecting are covered and illustrated by actual surveys. Good bibliography.

- KING, C. A. M. 151
Oceanography for geographers. Edward Arnold, 1962. xii, 337p, tables, diags, bibliog. 40s.

B General account with recourse to only elementary mathematics, physics, and biology. Fills an important gap in the literature.

- RUNCORN, S. K. ed. 152
Continental drift. NY, London, Academic P, 1962. xii, 338p, illus, tables, diags, bibliog. \$12; 86s. *International geophysics series*, vol. 3.

C Authoritative work for research workers and postgraduate students requiring critical examination of geophysical and geological evidence for continental drift.

57 Anthropological and Biological Sciences

BOURNE, G. H. 153
 Division of labor in cells. NY, London, Academic P, [1962]. viii,248p, illus, tables, diagrs. \$2.95; 21s. Paperback.

B Lucid general account of association of specific chemical and metabolic functions with discrete structures of (mainly) animal cells, for chemists and biologists. Well illustrated.

LINDAY, E. M. 154
 Practical introduction to microbiology. Spon, 1962. xxvii,227p, plates, tables, diagrs, bibliog. 45s. *Spon's chemical engineering series*.

B Introduction for engineers, chemists, and other non-biologists. Describes the organisms, their examination and culture, and outlines analytical methods.

SOCIETY FOR EXPERIMENTAL BIOLOGY 155
 Biological receptor mechanisms. Cambridge, CUP, for the Company of Biologists on behalf of the Society, 1962. vii,372p, plates, tables, diagrs, bibliog. 50s. *Symposia of the Society for Experimental Biology, no. 16*.

C Nineteen papers on the means whereby plants and animals transform information in their environment into an electrical or chemical form to which they respond internally.

58 Botany

EYRE, S. R. 156
 Vegetation and soils: a world picture. Edward Arnold, 1963. xvi,324p, plates, tables, diagrs, bibliog. 36s.

B For students of physical geography arranged on a regional basis; includes influence of past geological ages and that of man. Appendixes give vegetation maps of the continents and tables of climatic correlations with vegetation.

JENSEN, W. A. 157
 Botanical histochemistry: principles and practice, ill. by E. M. Towne. San Francisco, London, Freeman, [1962]. vii,408p, illus, tables, diagrs, bibliog. \$10; 70s. *Series of biology books*.

C Important compilation of modern techniques of tissue and cell analysis and plant histochemistry. Each section contains a lucid description of basic principles followed by well-illustrated schedules of procedure.

SIEGEL, S. M. 158
 Plant cell wall: a topical study of architecture, dynamics, comparative chemistry and technology in a biological system. Oxford, NY [etc], Pergamon P, 1962. xix,123p, illus, plates, tables, diagrs, bibliog. 2 gns; \$6.50. *International series of monographs on pure and applied biology. Division: plant physiology, vol. 2*.

C Briefly describes work on molecular architecture and chemical composition of cell walls, and on comparative chemistry of intercellular substances. Also covers physical properties of woods, fibres, and plastics, and the origin of coal.

6 APPLIED SCIENCES**61 Health and Safety**

HARRIS, R. J. C. ed 159
 Problems of laboratory animal disease: a symposium held at Liblice and Smolenice, 1 September-5 September 1961, under the auspices of Unesco and of the National Institutes of Health, US Public Health Service. London, NY, Academic P, 1962. x,265p, tables, diagrs, bibliog. 60s; \$9.

B Covers general epidemiology and immunity, and includes viral, bacterial, and helminth diseases of rabbits, mice, guineapigs, and monkeys.

SAFETY IN MINES RESEARCH ESTABLISHMENT

160

Dust explosions in factories: a review of the literature, by K. C. Brown and G. J. James; work done on behalf of HM Factory Inspectorate, Ministry of Labour. The Establishment, 1962. 67p, table, bibliog. 6s 6d. *Research report no. 201*. Paperback.

C Review of methods and conclusions of many investigations into dust explosions, especially as a factory hazard. Typewriter script.

62 Engineering and Technology

DEAN, M. ed.

161

Semiconductor and conventional strain gages, ed. by M. Dean, associate ed. R. D. Douglas. NY, London, Academic P, 1962. xxi, 381p, illus, tables, diagrs, bibliog. \$15; 107s 6d.

B Papers originally presented at two symposia of the Instrument Society of America, giving much up-to-date information on characteristics and applications of strain gages.

621 Mechanical and Electrical Engineering

621.039 NUCLEAR ENGINEERING

BARNES, D. E. and others, eds

162

Newnes concise encyclopaedia of nuclear energy, with a foreword by H. Kronberger. Newnes, 1962. x, 886p, illus, plates, tables, diagrs. 160s.

D Authoritative articles by over eighty contributors, covering nuclear science and technology and the associated physics and chemistry. Information up to 1960-61.

NIGHTINGALE, R. E. ed.

163

Nuclear graphite; prepared under the auspices of the Division of Technical Information, United States Atomic Energy Commission. NY, London, Academic P, 1962. xiii, 547p, illus, plates, tables, diagrs, bibliog. \$15.80; 113s 6d.

C Authoritative account of preparation, properties, and applications of graphite in nuclear energy industry, with emphasis on effects of irradiation.

WRIGHT, J. C.

164

Metallurgy in nuclear power technology. London, Iliffe; Englewood Cliffs (NJ), Prentice-Hall, 1962. 7, 188p, tables, diagrs. 32s 6d. *Nuclear reactor technology series*.

B Surveys production, properties, and behaviour in a reactor environment of the special materials used in nuclear power reactors.

621.3 Electrical Engineering

GENTILE, S. P.

165

Basic theory and application of tunnel diodes. Princeton (NJ), London [etc], Van Nostrand, [1963]. x, 295p, plate, tables, diagrs, bibliog. \$9; 70s.

B Explanatory account including a little elementary circuit theory and many practical chapters on single and cascade amplification; oscillators; pulse, switching, and logic circuits; modulation and detection.

MCGEE, J. D. and others, eds

166

Photo-electronic image devices: proceedings of the second symposium held at Imperial College, London, September 5-8, 1961, ed. by J. D. McGee, W. L. Wilcock, and L. Mandel. NY, London, Academic P, 1962. xv, 654p, illus, tables, diagrs, bibliog. \$18.50; 130s. *Advances in electronics and electron physics, vol. 16*.

C Practical survey for specialists covering most aspects of recent developments in design, testing, and manufacture of electronic image storage and intensification devices used in astronomy, television, nuclear physics, and x-radiology. Several papers in French.

- ROBINSON, E. A. 167
Random wavelets and cybernetic systems. Griffin, 1962. x, 125p, diags, bibliog. 34s. *Griffin's statistical monographs and courses, no. 9.*

B Introduces the minimum-delay concept generalizing that of minimum-phase and covers control systems with multiple-inputs and outputs. For students and research workers in cybernetics, physics, and electrical engineering.

- VAN VALKENBURGH, NOOGER & NEVILLE, INC. 168
Basic industrial electricity; vols 1 and 2. NY, Rider, [©1962]. [6], 131; [5], 129p, illus, tables, diags. 2v. \$3.50 each.

A Good coverage, each subject set out in simple progressions with many diagrams. In 'teach-yourself' style, a questions supplement is available to make the book useful for programmed learning.

621.4 Internal Combustion Engines

- BURMAN, P. G. and DELUCA, F. 169
Fuel injection and controls for internal combustion engines. [NY, Simmons-Boardman]; London, Technical P, [1962]. [4], 296p; illus, tables, diags, bibliog. \$16; 5 gns.

B-C Historical survey with brief description of US and British patents, followed by comprehensive presentation of theory, design, testing, use, and maintenance. Typewriter script.

621.7 Workshop Practice

- BAERNES, A. W. and TILBROOK, A. W. 170
Theory and practice of drawing for engineers. EUP, 1962. xi, 243p, tables, diags. 17s 6d. *Higher technical series.*

B-C Comprehensive text to Dip. Tech. or degree level; for teachers and students.

- INSTITUTE OF PACKAGING 171
Fundamentals of packaging, technical ed. F. A. Paine. London, Glasgow, Blackie, [1962]. [9], 330p, plates, tables, diags, bibliog. 2 gns.

B-C Students' text and reference for all interested in packaging in industry and commerce.

623 Military and Naval Engineering

- CLEMOW, J. 172
Missile guidance. Temple P, 1962. viii, 87p, diags, bibliog. 15s. *Temple Press monographs on rockets and missiles.*

B Principles and practices of beam-riding, homing, and command guidance systems, with a minimum of mathematics. Inertial guidance not included.

628 Public Health Engineering

- KLEIN, L. and others 173
River pollution; 2, causes and effects, with chapters by J. R. E. Jones and H. A. Hawkes and a section by A. L. Downing. Butterworths, 1962. xiv, 456p, plates, tables, diags, bibliog. 75s.

B Well-referenced surveys of chemical, physical, biological, and legal aspects. 2nd edition of first part of *Aspects of river pollution* (1957).

629.1 Transport Engineering

- HENSHAW, J. T. ed. 174
Supersonic engineering: a symposium held at the Royal College of Advanced Technology, Salford. London, Melbourne [etc], Heinemann, 1962. viii, 264p, tables, diags, bibliog. 3 gns.

C Papers by engineers from the aircraft industry on wide range of problems involved in the projected supersonic transport aircraft. Of interest but transient value.

INTERNATIONAL COUNCIL OF THE AERONAUTICAL SCIENCES

175

Advances in aeronautical sciences; vols 3 and 4: proceedings of the second international congress in the aeronautical sciences, Zürich 12-16 September 1960, ed. by T. von Kármán and others. Oxford, NY [etc], Pergamon P, 1962. xxiv,592,[4];xxiv,593-1208,[4]p, illus, tables, diagrs, bibliog. 2v. 300s; \$45 per set. *International series in aeronautics and astronautics. Division 9: Symposia, vols 7 and 8.*

C Over fifty papers on all aspects of aeronautical research; some of outstanding and permanent value, some of more transient interest. A few papers in French or German.

KONARSKI, M. M.

176

Russian-English dictionary of modern terms in aeronautics and rocketry. Oxford, NY [etc], Pergamon P, 1962. xi,515p. 200s; \$30.

D Part 1 contains a dictionary of Russian terms in alphabetical order and numbered, with English equivalents; an alphabetical list of abbreviations of Russian terms; and an alphabetical index of English terms referred by number to the Russian dictionary. Part 2 contains useful technical data. Deals with phrases in many cases rather than individual words, and indicates field of application where relevant. Terms from wide range of allied fields.

63 Agriculture. Forestry. Livestock. Fisheries

AUSTRALIAN INSTITUTE OF AGRICULTURAL SCIENCE

177

Manual of Australian agriculture, ed. for the Institute by I. Molnar, with the assistance of a committee. Heinemann, 1961 [i.e. May 1962]. [9],870p, illus, plates, tables, diagrs. 120s.

B Information on subjects of general importance and of interest to wide range of readers.

BOLTON, J. L.

178

Alfalfa: botany, cultivation, and utilization. London, Leonard Hill; NY, Interscience, 1962. xiv,474p, plates, tables, diagrs, bibliog. 4 gns. *World crop books.*

C Up-to-date and comprehensive book on alfalfa or lucerne (*Medicago sativa*), one of the world's most nutritious and widely grown fodder crops.

COUCH, H. B.

179

Diseases of turfgrasses. NY, Reinhold; London, C & H, 1962. xiii,289p, illus, plates, bibliog. \$10; 80s. *Reinhold books in agricultural science.*

B Includes list of diseases arranged according to grass species affected (in alphabetical order of common names, with supplementary table referring botanical to common names).

GREENFIELD, I.

180

Turf culture. Leonard Hill, 1962. xiv,364p, illus, plates, tables, diagrs. 55s.

B Comprehensive scientific account of turf composition and weed and pest control.

66 Chemical Technology

CHELYUSTKIN, A. B.

181

Problems in the automation of the metallurgical industry, tr. [from the Russian] by H. S. H. Massey, tr. ed. by H. T. Protheroe. Oxford, NY [etc], Pergamon P, 1962. [5],99p, diagrs. 35s; \$6.50.

C Non-mathematical but comprehensive presentation of techniques used in the automation of the Russian steel industry, covering both smelting processes and rolling mills.

HEPNER, I. L. ed.

182

Materials of construction for chemical plant. Leonard Hill, 1962. [7],204p, illus, tables, diagrs, bibliog. 45s.

C Short chapters cover all known materials for chemical plant. High but uneven standard.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
McG-H	McGraw-Hill
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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A MONTHLY LIST OF RECOMMENDED
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with annotations

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ASLIB BOOK LIST

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Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

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016 *Subject Bibliographies*

- BOTTLE, R. T. *ed.* 183
Use of the chemical literature. Butterworths, 1962. x,231p, plates, tables, bibliog. 35s.
B Indicates basic books and periodicals on chemistry and the use of these to gather information. Of considerable value to chemist and librarian making first acquaintance with chemical literature.

3 SOCIAL SCIENCES

31 Statistics

- KEEPING, E. S. 184
Introduction to statistical inference. Princeton (NJ), London [etc], Van Nostrand, [1963]. xi,451p, tables, diags, bibliog. 66s.
B Modern-styled treatment of basic statistical methods used in drawing conclusions from limited and imperfect data. Some mathematical knowledge required, but a special appendix is provided.
- STUART, A. 185
Basic ideas of scientific sampling. Griffin, 1962. 99p, tables. 18s. *Griffin's statistical monographs and courses, no. 4.*
A-B Exposition for non-specialist readers; first part also provides introduction to general statistical studies. Typewriter script.

33 Economics

- SCOTT, J. D. 186
Vickers: a history. Weidenfeld & Nicolson, [1963]. xxiii,416p, plates, table. 2 gns.
A An authoritative history on the growth and ramifications of the huge shipbuilding, aircraft and heavy engineering organization known as 'Vickers'.

5 MATHEMATICS AND NATURAL SCIENCES

- ISAACS, A. 187
Introducing science. Penguin, 1963. 244p, tables, diags. 5s. *Pelican books, A562.*
A Descriptive introduction to the fundamental ideas of modern science for the non-scientist.
- NICHOLSON, D. E. 188
The universe, matter and life. EUP, 1962 [i.e. Jan. 1963]. vii,181p, diags. 7s 6d. *Teach yourself books.*
A Highly readable presentation in simple language of some of the major topics in astronomy, chemistry, physics, and biology. For the scientifically minded layman and young student.

51 Mathematics

- DAVID, F. N. 189
 Games, gods and gambling: the origins and history of probability and statistical ideas from the earliest times to the Newtonian era. Griffin, 1962. xvi, 275p, illus, plates, tables, bibliog. 2 *gns*.
B A serious but readable study of the origins and historical development of combinatorial analysis and the theory of probability to the middle of the eighteenth century.
- PONTRYAGIN, L. S. 190
 Ordinary differential equations, tr. from the Russian by L. Kacinskas and W. B. Counts. Reading (Mass), Addison-Wesley; Oxford, NY [etc], Pergamon P, 1962, vi, 298p, diagrs. \$9.50; 55s.
B Directed chiefly to engineering students and based on theory of oscillations and of automatic control. Covers linear equations, stability theory, matrices, and linear algebra.
- SANGER, J. 191
 Worked examples in engineering mathematics. Hutchinson Technical Education, 1963. [5], 191p, diagrs. 21s.
B Detailed solutions to problems set in mathematics at the B.Sc.(Eng.) examination (Pt 1) of London University from 1953 to 1960; suitable also for HNC and Dip.Tech. students.
- UNITED STATES ARMY, Mathematics Research Center 192
 Nonlinear problems: proceedings of a symposium conducted by the Mathematics Research Center, United States Army, at the University of Wisconsin, Madison, April 30–May 2, 1962, ed. by R. E. Langer. Madison (Wisc), Wisconsin UP, 1963. xiii, 321p, diagrs, bibliog. \$7.50.
C Fifteen papers and twenty-six abstracts relating to pure and applied mathematical research in the field of nonlinear mathematical, physical, and engineering problems.

52 Astronomy. Surveying. Geodesy

- DEUTSCH, A. J. and KLEMPERER, W. B. eds. 193
 Space age astronomy: an international symposium sponsored by Douglas Aircraft Company, Inc., August 7–9, 1961, at the California Institute of Technology in conjunction with the XI General Assembly of the International Astronomical Union. NY, London, Academic P, 1962. xxi, 531p, illus, tables, diagrs, bibliog. \$16.50; 118s.
C Authoritative and comprehensive survey of techniques and astronomical objectives of research by means of instruments installed in space probes and artificial satellites.
- VOSE, J. 194
 Dumpy level work: a guide to its use in building construction and simple surveying. 2nd ed. Cleaver-Hume P, 1962. 105p, illus, table, diagrs. 12s 6d.
A–B Description of the design, use, care, and adjustment of various levels and associated equipment, e.g. staffs.

53 Physics

- IKENBERRY, E. 195
 Quantum mechanics for mathematicians and physicists. NY, OUP, 1962; [London, OUP, 1963]. xii, 269p, diagrs, bibliog. \$8; 64s.
B Elementary introduction using an axiomatic approach, its usefulness being in the numerous problems and references to further reading, rather than providing a careful exposition of the many new concepts.

- KINNEY, G. F. 196
Explosive shocks in air. NY, London, Macmillan (NY), [1963]. ix, 198p, tables, diags, bibliog. \$7.50; 55s.

C Detailed account of the phenomena associated with explosions in air, including the generation and propagation of shock waves, and the dynamic loads responsible for structural damage.

- MIELE, A. 197
Flight mechanics; vol. 1, theory of flight paths. Reading (Mass), Addison-Wesley; London, Paris, Pergamon P, 1962. xi, 416p, tables, diags, bibliog. \$12.50; 70s. *Addison-Wesley series in the engineering sciences.*

C Deals briefly with basic principles and performance aspects of flight from subsonic to hypersonic speeds over a flat earth. To be read in conjunction with more specialized works.

- THOMPSON, W. B. 198
Introduction to plasma physics. Oxford, NY [etc], Pergamon P, 1962. viii, 256p, tables, diags, bibliog. \$10; 70s.

B Good theoretical book on plasmas in relation to controlled thermonuclear reactions. For physics graduates.

539.1 Nuclear Physics

- FORREST, P. G. 199
Fatigue of metals. Oxford, NY [etc], Pergamon P, 1962. ix, 425p, illus, tables, diags, bibliog. \$12; 70s.

C A comprehensive book by a recognized authority, giving a critical and extensive coverage of the subject. Intended for engineers and covers aspects of testing, properties, and designs.

54 Chemistry

- FLETT, M. St. C. 200
Physical aids to the organic chemist. Amsterdam, NY, Elsevier, 1962. [12], 388p, tables, diags, bibliog. 22.50 gds. *Elsevier monographs, chemistry section.*

B A very useful account of the theoretical principles, experimental and especially instrumental methods used in the separation, purification, identification, and quantitative analysis of organic compounds for practising organic chemists and analysts. Selected references.

- GEL'MAN, A. D. and others 201
Complex compounds of transuranium elements, tr. from the Russian by C. N. Turton and T. I. Turton. NY, Consultants Bureau, 1962. [10], 195p, illus, tables, diags, bibliog. \$12.50.

C Interesting account of the complexes of, particularly, neptunium and plutonium; useful summary of Russian work in this field.

- STACEY, M. and others, eds 202
Advances in fluorine chemistry, ed. by M. Stacey, J. C. Tatlow, A. G. Sharpe; vol. 3. Butterworths, 1963. [4], 281p, plate, tables, diags, bibliog. 50s.

C A very useful book for workers researching in fluorine chemistry. It contains six reviews which deal mainly with organic aspects of fluorine.

- STONE, F. G. A. and GRAHAM, W. A. G. eds 203
Inorganic polymers. NY, London, Academic P, 1962. xi, 631p, tables, diags, bibliog. \$19.50; 140s.

C An excellent review of the chemistry of inorganic polymers, invaluable to research workers and others interested in their practical application.

55 Geology, Meteorology

- BORISENKO, L. F. 204
 Scandium: its geochemistry and mineralogy, tr. from the Russian. NY, Consultants Bureau, [1963]. [3], 78p, illus, tables, diags, bibliog. \$17.50.
 C Of interest to geochemists, mineralogists, and economic geologists.
- KIRKALDY, J. F. 205
 General principles of geology. 3rd ed. Hutchinson, 1962. 332p, illus, plates, tables, diags, bibliog. 35s.
 A-B One of the best introductions to geology available in Britain.
- RUNCORN, S. K. *ed.* 206
 Continental drift. NY, London, Academic P, 1962. xii, 338p, plates, tables, diags, bibliog. \$12; 86s.
 B Twelve chapters by various authors on aspects of earth structure and continental drift.

57 Anthropological and Biological Sciences

- ALLEN, J. M. *ed.* 207
 Molecular control of cellular activity. NY, London, McG-H, 1962. vii, 328p, illus, tables, diags, bibliog. \$10.50; 81s 6d.
 C Well documented series of lecture papers given by experts in various aspects of cell biology.
- CARTHY, J. D. and DUDDINGTON, C. L. 208
 Viewpoints in biology; 1. Butterworths, 1962. ix, 290p, illus, plate, tables, diags, bibliog. 75s.
 B-C New series incorporating reviews of recent work in the biological sciences, particularly aimed to inform workers in other fields; merits serious attention from all biologists.
- WADDINGTON, C. H. 209
 Biology for the modern world, with a foreword by S. Radhakrishnan. London, Toronto [etc], Harrap, 1962. x, 120p, diags, bibliog. 8s 6d. *Science for the modern world series.*
 A-B Outlines in simple terms the understanding which modern biochemistry, cytology, and genetics give of all aspects of biological science.

58 Botany

- FOGG, G. E. 210
 Growth of plants. Penguin, 1963. 288p, plates, diags, bibliog. 7s 6d. *Pelican books.*
 A Introduction to basic processes of plant growth and differentiation of cells and tissues.
- HILLMAN, W. S. 211
 Physiology of flowering. Holt, Rinehart & Wilson, 1962. xii, 164p, illus. \$4.50. *Biology studies.*
 B Written for several types of reader from postgraduate students to laymen.
- SIEGEL, S. M. 212
 Plant cell wall: a topical study of architecture, dynamics, comparative chemistry and technology in a biological system. Oxford, NY [etc], Pergamon P, 1962. xix, 123p, illus, plates, tables, diags, bibliog. 42s. *International series of monographs on pure and applied biology, plant physiology division, vol. 2.*
 B

- SPORNE, K. R. 213
 Morphology of pteridophytes: the structure of ferns and allied plants. Hutchinson, 1962. 192p, illus, table, diagrs, bibliog. 12s 6d. *Hutchinson University library: biological sciences*.

E Summary account of both living and fossil vascular cryptogams, arranged in a modern classification, with brief re-appraisal of some theories concerning their evolution.

59 Zoology

- GOIN, C. J. and GOIN, O. B. 214
 Introduction to herpetology. San Francisco, London, Freeman, [1962]. ix, 341p, illus, tables, diagrs, bibliog. \$8; 57s.

B Provides for second year biology students a comprehensive survey of taxonomy, evolution, structure, and natural history of amphibians and reptiles, with a summary of the distribution and life histories of modern forms.

- SLEIGH, M. A. 215
 Biology of cilia and flagella. Oxford, NY [etc], Pergamon P, 1962. xiii, 242p, plates, tables, diagrs, bibliog. \$10; 70s. *International series of monographs on pure and applied biology. Division: zoology, vol. 12*.

B-C Concise and comprehensive summary of structure and function of cilia, with physiological accounts of movement, co-ordination, and the factors affecting ciliary activity.

6 APPLIED SCIENCES

62 Engineering and Technology

- BANKS, B. and others 216
 Ultrasonic flaw detection in metals: theory and practice, by B. Banks, G. E. Oldfield, H. Rawding. London, Iliffe; Englewood Cliffs (NJ), Prentice-Hall, [1962]. 8, 256p, plates, tables, diagrs, bibliog. 3 *gnr*.

A-B Useful ready reference source for the practical man and the student.

- LLOYD, D. K. and LIPOW, M. 217
 Reliability: management, methods, and mathematics. Prentice-Hall, 1962. xxii, 528p, tables, diagrs. 70s. *International series in engineering. Space technology ed. by C. W. Basserer and Floyd E. Nixon*.

C Best of all books on the subject now available.

- STANFORD, E. G. and others, eds 218
 Progress in applied materials research [formerly Progress in non-destructive testing]; vol. 4, ed. by E. G. Stanford, J. H. Fearon, W. J. McGonnagle. Heywood, 1962 [i.e. Jan. 1963]. ix, 246p, illus, tables, diagrs, bibliog. 70s.

C Authoritative reviews of recent progress in six methods of non-destructive testing.

621 Mechanical and Electrical Engineering

621.039 NUCLEAR ENGINEERING

- INTERNATIONAL ATOMIC ENERGY AGENCY 219
 Programming and utilization of research reactors: proceedings of a symposium held in Vienna, October 16-21, 1961; vols 2 and 3. London, NY, Academic P for the Agency, 1962 [i.e. Jan. 1963]. xviii, 528p; xv, ii, 503p, illus, tables, diagrs, bibliog. 2v. \$15 each; 5 *gnr* each.

C Symposium proceedings and discussions devoted to research reactor use in physical and life sciences, with emphasis on needs of new reactor centres.

SNELL, A. H. *ed.*

220

Nuclear instruments: vol. 1, ionization detectors, scintillators, Cerenkov counters, amplifiers: assay, dosimetry, health physics. NY, London, Wiley, 1962. [7], 494p, illus, tables, diagrs, bibliog. \$7.50; 57s.

C Describes commonly used nuclear particle detectors in mature stage of development; very new and obsolete instruments omitted.

621.3 Electrical Engineering

BAKER, C. H.

221

Man and radar displays. Oxford, NY [etc], Pergamon P for Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization, 1962. viii, 192p, tables, diagrs, bibliog. \$10; 70s. *Agardograph* 60.

B Deals with the problem of the human link in the chain of events involved in the operation of radar systems. A book for those preparing system specifications.

DUMMER, G. W. A.

222

Variable resistors and potentiometers. 2nd ed. Pitman, 1963. xi 228p, illus, tables, diagrs, bibliog. 45s. *Radio and electronic components*, vol. 2.

B A description of all types of variable resistor and their characteristics, with a good bibliography; written by an author from RRE who has spent many years in designing and testing components.

DUMMER, G. W. A. and GRIFFIN, N. B.

223

Environmental testing techniques for electronics and materials. Oxford, NY [etc], Pergamon P, 1962. x, 444p, plates, tables, diagrs, bibliog. \$15; 100s. *International series of monographs on electronics and instrumentation*, vol. 15.

B Describes all forms of environments, their effects on components and materials, methods of creating induced environments, testing and evaluation. Construction of testing equipment is described.

SCHWENKHAGEN, H. F.

224

Dictionary of electrical engineering: German-English, English-German. Pitman, 1962. 1058p. 85s.

D A well presented, valuable collection of terms of little practical use to English users as no indication of gender is given. Good table of abbreviations, UDC numbers are used for subject reference.

621.4 Internal Combustion Engines

DABOO, J. E.

225

Solid-fuel rocket propulsion. Temple P, 1962. [6], 88p, tables, diagrs, bibliog. 15s. *Temple Press monographs on rockets and missiles*.

C Useful account of rocket propulsion theory and the design and performance of solid propellant rocket motors.

621.5 Pneumatic Energy

TURNBULL, A. H. and others

226

Introduction to vacuum technique, by A. H. Turnbull, R. S. Barton, and J. C. Riviere, with a foreword by F. A. Vick. Newnes, 1962 [i.e. Jan. 1963]. x, 190p, plates, tables, diagrs, bibliog. 50s. *Newnes practical science books*.

B Useful introduction to vacuum technique by authors who have had practical experience of the subject at the Atomic Energy Research Establishment, Harwell.

621.7 Workshop Practice

- STARLING, C. W. 227
Theory and practice of flat rolling. ULP, [1962], 176p, plates, diags, tables, bibliog. 30s.
B This is a clearly and concisely written, well illustrated introduction to the subject.

621.8 Power Transmission

- COULING, S. A. 228
Industrial and marine gearing. C & H, 1962. xvii, 236p, tables, diags, bibliog. 45s. *Advanced engineering textbooks*.
B Specialized book describing all aspects of the design and manufacture of helical gearing.

621.9 Machine Tools

- COCK, S. J. 229
Single-spindle automatics. Brighton, London, Machinery, [1962]. 79p, illus, tables, diags. 5s 6d. *Machinery's yellow back series, no. 48*.
B Useful contribution to the well-known series on metal-working; for students in HNC and City and Guilds Courses, production engineers, jig and tool designers, and machine tool operators.

624 Structural Engineering

- CRESWELL, D. A. and KING, J. H. G. 230
Structural engineer's data book. 2nd ed. Pitman, 1962 [i.e. Jan. 1963]. Various paging, tables, diags. 35s. Loose-leaf.
D A valuable reference book for structural designers, giving the essential theoretical and practical background to structural design.

625 Railway and Highway Engineering

- ROAD RESEARCH LABORATORY 231
Bituminous materials in road construction. HMSO, 1962. xxiv, 611p, plates, table, diags, bibliog. 42s.
B-C Third volume of a series intended as reference books for road engineers.

629.19 ASTRONAUTICS

- NAYLER, J. L. ed. 232
Advances in space technology: proceedings of a symposium held at Hatfield College of Technology, Hertfordshire. Newnes, 1962. xiii, 215p, plates, tables, diags, bibliog. 45s.
C Papers on latest developments, satellite dynamics, space navigation problems, communications satellites, re-entry, materials, structural design, and human engineering.

63 Agriculture. Forestry. Livestock. Fisheries

- HAFEZ, E. S. E. ed. 233
Reproduction in farm animals. Baillière, Tindall & Cox, 1962. 367p, illus, plates, tables, diags, bibliog. 96s.
B Useful to agricultural, veterinary students and everyone interested in an up-to-date account emphasizing the physiological viewpoint.

- MURPHY, P. W. *ed.* 234
 Progress in soil zoology: papers from a colloquium on research methods organized by the Soil Zoology Committee of the International Society of Soil Science held at Rothamsted Experimental Station, Herts, 10th-14th July, 1958. Butterworths, 1962. xviii, 398p, illus, tables, diagrs, bibliog. 70s.

B

66 Chemical Technology

- DENAVARRE, M. G. 235
 Chemistry and manufacture of cosmetics; vol. 2, cosmetic materials, with a foreword by S. Wilson. 2nd ed. Princeton (NJ), London [etc], Van Nostrand, [1963]. xiv, 413p, illus, tables, diagrs, bibliog. \$12.50; 97s.

C This full revision provides an authoritative review of cosmetic raw materials.

- GOODSON, F. J. 236
 Clay preparation and shaping. Brick Development Assoc, 1962. iv-ix, 124p, illus, diagrs. 15s 6d.

B One of a series of textbooks for the heavy clay industry sponsored by the Association.

- HARRY, R. G. 237
 Principles and practice of modern cosmetics; vol. 2, cosmetic materials: their origin, characteristics, uses and dermatological action. 2nd ed. rev. by W. W. Myddleton. Leonard Hill, 1963. xv, 803p, tables, diagrs. 4 gns.

C Authoritative revision reviewing the physical and chemical properties, specifications, and applications of the raw materials used in the cosmetics industry.

- MACINTOSH, R. W. D. 238
 Frozen food: the growth of an industry, Refrigeration P, 1962. 96p, illus, tables, diagrs. 15s.

B Provides newcomers to the industry with the background knowledge difficult to obtain elsewhere.

- ROBSON, T. D. 239
 High-alumina cements and concretes. London, Contractors Record; NY, Wiley, 1962. 263p, tables, diagrs, bibliog. 40s. *Concrete library*.

C A valuable monograph on properties and applications.

67/68 Manufactures

- O'FLAHERTY, F. *and others, eds* 240
 Chemistry and technology of leather, ed. by F. O'Flaherty, W. T. Roddy, R. M. Lollar; vol. 3, process control of leather quality. NY, Reinhold; London, C & H, [1962]. ix, 518p, illus, tables, diagrs, bibliog. \$15; 120s. *American Chemical Society monograph series*.

C Authoritative treatment of theory and practice of the later stages of leather production (e.g. fat-liquoring) and methods for individual leather types. Volume title is misleading.

7 THE ARTS

71 Physical Planning

- BEST, R. H. *and* COPPOCK, J. T. 241
 The changing use of land in Britain. Faber, 1962. 253p, tables, diagrs, bibliog. 42s.

B Describes the rapid and radical transformation of the landscape of Great Britain in the 'sixties.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
McG-H	McGraw-Hill
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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ASLIB BOOK LIST

VOL. 28

NO. 5

MAY 1963

Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

The place of publication is London unless otherwise stated.

Aslib is deeply appreciative of the services of those subject specialists and special librarians who examine and assess the books to be listed. Without their help it would be impossible to ensure that entries are up to date and that only books of high standard are included.

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Aslib Book List

VOLUME 28 . NUMBER 5 . MAY 1963

5 MATHEMATICS AND NATURAL SCIENCES

- ALEXANDER, P. 242
Sensationalism and scientific explanation. London, R & KP; NY, Humanities P, [1963]. v,149p, bibliog. 16s. *Studies in philosophical psychology* ed. by R. F. Holland.
C Useful contribution to current debate on scientific description and explanation, refuting the view that science is reducible to incorrigible atomic experiences, and distinguishing description from explanation.
- BARNETT, S. A. and MCLAREN, A. eds 243
Penguin science survey 1963; B, biology, genetics, agriculture, medicine, zoology. Penguin, 1963. 242p, illus, plates, table, diags, bibliog. 7s 6d.
A Not a comprehensive review of recent discoveries, but a selection of exciting essays by distinguished contributors.
- GARRATT, A. ed. 244
Penguin science survey 1963; A, astronomy, chemistry, cosmology, education, mathematics, physics, space research. Penguin, 1963. 224p, plates, tables, diags. 7s 6d.
A Account for the layman and student of contemporary research and trends in the physical and associated sciences named.
- SCHLESINGER, G. 245
Method in the physical sciences. London, R & KP; NY, Humanities P, [1963]. vii,140p. 21s. *International library of philosophy and scientific method* ed. by A. J. Ayer.
C Original discussion of the principles of simplicity, micro-reduction, connectivity, and verification as they operate within science.
- 51 Mathematics**
- ARIS, R. 246
Vectors, tensors, and the basic equations of fluid mechanics. London, [Paris, etc], Prentice-Hall International, 1962. xiv,286p, tables, diags. 42s.
B Physico-mathematical study of Cartesian and general tensors in relation to physical field theories and fluid mechanics. Treatment also applicable to electricity, magnetism, elasticity, and other topics. For engineers, physicists, and applied mathematicians.
- ARNOLD, B. H. 247
Logic and Boolean algebra. Englewood Cliffs (NJ), [London], Prentice-Hall, 1962. [9],144p, diags, bibliog. 54s.
B Develops theory of Boolean algebras from simpler algebraic systems through algebraic logic, ordered sets, lattices, Boolean rings, and duality. Applications to electrical switching circuits, computer design, and logic. For computer designers and analysts, and students of logic.
- BELOUSOV, S. L. 248
Tables of normalized associated Legendre polynomials, tr. [from the Russian] by D. E. Brown. Oxford, NY [etc], Pergamon P, 1962. [3],379p, tables, diags, bibliog. 140s. *Mathematical tables series, vol. 18*.
D The Legendre polynomials, $P_n^m(\cos \theta)$, multiplied by a normalizing factor, are tabulated to six places of decimals, for $0 \leq m \leq 36$, $m \leq n \leq 56$, with θ at intervals of 2.5° from 0° to 90° .

- LASALLE, J. P. *and* LEFSCHETZ, S. *eds* 249
Recent Soviet contributions to mathematics. NY, London, Macmillan (NY), [1963]. viii, 324p, diags, bibliog. 66s.

D Analysis of Soviet mathematical literature from 1957-60 covering algebra, functional analysis, differential equations, and other topics, with an introduction comparing Soviet production in these fields with the United States.

- ROBICHAUD, L. P. A. *and others* 250
Signal flow graphs and applications, [by] Louis P. A. Robichaud, Maurice Boisvert [and] Jean Robert. London, [Paris, etc], Prentice-Hall International, [©1962]. xiv, 214p, diags, bibliog. 42s.

C Research monograph for engineers and physicists giving basic theory and use of the graphs in the study of physical systems that can be represented by a schematic diagram. Given in terms of electrical network theory, applications to electrical networks and machines, and graph reduction by computer.

- ZELEN, M. *ed.* 251
Statistical theory of reliability: proceedings of an advanced seminar conducted by the Mathematics Research Center, United States Army, at the University of Wisconsin, Madison, Mar 8-10, 1962. Madison, University of Wisconsin P, 1963. xvii, 166p, diags, bibliog. \$5.

C Valuable review of work in this important field which includes not only reliability of products in service but also maintenance and renewal of production equipment.

53 Physics

- ACTON, J. R. *and* SWIFT, J. D. 252
Cold cathode discharge tubes. Heywood, 1963. vii, 351p, tables, diags, bibliog. 67s 6d.

B-C Valuable, concise survey of the basic physics of conduction mechanisms in gaseous discharge tubes and its application to the design and performance of stabilizers, trigger tubes, dekatrons; and geiger counters.

- ALBERS, V. M. *ed.* 253
Underwater acoustics: proceedings of an institute sponsored by the Scientific Affairs Committee of the North Atlantic Treaty Organization and conducted by the Pennsylvania State University at the Imperial College of Science and Technology of the University of London, July 31-August 11, 1961. NY, Plenum P, [1963]. xiii, 354p, illus, tables, diags, bibliog. \$12.50. *Pennsylvania State University publications*.

C Eighteen papers by acknowledged experts, about one-third deal with instruments and the remainder with general investigations.

- BEYER, R. 254
Kinematic synthesis of mechanisms, tr. from the German by H. Kuenzel. C & H, 1963. xii, 353p, table, diags, bibliog. 65s.

C One of the few books presenting in English the modern development of kinematics, pursued largely in Germany.

- DALITZ, R. H. 255
Strange particles and strong interactions. OUP, for Tata Institute of Fundamental Research, Bombay, 1962 [i.e. March 1963]. [6], 187p, tables, diags, bibliog. 34s. *Tata Institute of Fundamental Research studies in physics*. Paperback.

C Comprehensive phenomenological survey by one of the leading authorities, including spin and parity determinations of particles and resonances, reaction matrix theory, and dispersion relations.

- GUREVICH, A. G. 256
 Ferrites at microwave frequencies: authorized translation from the Russian by A. Tybulewicz. NY, Consultants Bureau, [©1963]. vii, 329p, diags, bibliog. \$17.50.
 C Outstanding book on the magnetic properties of ferrites in weak microwave electromagnetic fields, oscillations and waves in systems containing ferrites, and nonlinear processes in ferrites in strong alternating fields.
- PALMER, C. H. 257
 Optics: experiments and demonstrations. Baltimore (Md), Johns Hopkins P; [London, OUP], 1962. viii, 321p, diags, bibliog. 40s. Paperback.
 B Good up-to-date laboratory manual for the physics student in his first years at university.
- PREDVODITELEV, A. S. 258
 Physics of heat exchange and gas dynamics: authorized translation from the Russian. NY, Consultants Bureau, [1963]. 99p, illus, tables, diags. \$17.50.
 C Collection of papers from the Combustion Physics Laboratory, Academy of Sciences, USSR, on the theoretical and experimental aspects of the hydrodynamics and transfer processes associated with supersonic gas flow.
- SEVERS, E. T. 259
 Rheology of polymers. NY, Reinhold; London, C & H, 1963. xi, 180p, diags. 60s.
 B Introduction for non-specialists, discussing the four major categories of polymers and recent advances. Of interest to plastics engineers.
- WOLFENDALE, A. W. 260
 Cosmic rays. Newnes, [1963]. ix, 222p, tables, diags, bibliog. 50s. *Technical survey series*.
 B Surveys the whole field of cosmic ray physics, briefly and accurately, at undergraduate level; there is no other book available of comparable standard.

539.1 Nuclear Physics

- KRUPCHITSKII, P. A. *ed.* 261
 Soviet progress in neutron physics: authorized translation from the Russian. NY, Consultants Bureau, [1963]. [8], 269p, tables, diags. \$30 (subscribers to *J. Atomic Energy*); \$40.
 C From Russian text published by Gosatomizdat, the State Press for Literature in the Field of Atomic Science and Technology, in Moscow, 1961. In four sections, for specialists in nuclear physics.
- LONGMIRE, C. L. *and others, eds* 262
 Plasma physics and thermonuclear research; vol. 2, ed. by C. L. Longmire, J. L. Tuck, and W. B. Thompson. Oxford, NY [etc], Pergamon P, 1963. viii, 367p, plates, tables, diags, bibliog. 100s. *Progress in nuclear energy, series II*.
 C Ten review articles covering developments in thermonuclear research during the period 1958-61. Covers all geometries except stabilized pinch and stellarator.
- SEMAT, H. 263
 Introduction to atomic and nuclear physics. 4th ed. C & H, [1963]. x, 628p, illus, tables, diags, bibliog. 70s.
 B Standard textbook for students of science and engineering who have had a general course in physics and are familiar with calculus. Emphasis on experimental foundations of the subject.

54 Chemistry

- BOVEY, L. *ed.* 264
Spectroscopy in the metallurgical industry: papers contributed to the Buxton Symposium, July 1962. Hilger & Watts, [1963]. vii, 90p, plates, tables, diags. 30s.
B-C Practical papers describing the application of X-ray fluorescence, ultra-violet spectroscopy, and mass spectroscopy to analysis of ferrous and non-ferrous alloys.
- CHROMATOGRAPHIC analysis: discussions of the Faraday Society, no. 7, 1949. 265
Butterworths, 1963. 336p, plates, tables, diags, bibliog. 60s.
B-C Reprint of discussion held in 1949 includes important papers by well-known authorities dealing with both theoretical principles and with applications in inorganic and organic chemistry and in biochemistry.
- CROUTHAMEL, C. E. *ed.* 266
Analytical chemistry. Oxford, NY, [etc], Pergamon P, 1962. v, 93p, tables, bibliog. 30s. *Progress in nuclear energy, series X, vol. 3, parts 1-3.*
C Three review articles covering various aspects of radiochemical analysis.
- GAS chromatography, 1962: proceedings of the fourth symposium organized by 267
the Fachgruppe Analytische Chemie of the Gesellschaft Deutscher Chemiker and the Gas Chromatography Discussion Group of the Hydrocarbon Research Group of the Institute of Petroleum, held at the Auditorium Maximum, Hamburg, 13-16 June 1962. Ed. by M. van Swaay. Butterworths, 1962. lii, 411p, tables, diags, bibliog. 100s.
C Research papers and lectures on the theory, apparatus, technique, and application of gas chromatography.
- KING, A. *and* FROMHERZ, H. 268
German-English chemical terminology: an introduction to chemistry in English and German. 4th ed. Weinheim, Verlag Chemie, 1963. xxi, 588p, tables, bibliog. DM 48.
B, D Largely rewritten bilingual introduction to the major branches of chemistry with English and German texts on opposite pages, greatly extended indexes. New section on phonetics of English terms. Appendixes on mathematical terms and abbreviations.
- PAVLATH, A. E. *and* LEFFLER, A. J. 269
Aromatic fluorine compounds. NY, Reinhold; London, C & H, [1962]. xviii, 820p, tables, bibliog. 208s. *American Chemical Society monograph no. 155.*
C Comprehensive reference text discussing preparation, properties, and reactions. Properties for almost all compounds listed fully and applications to agriculture, dyestuffs, and pharmacology discussed. Over two thousand references to end of 1958 (*Chemical Abstracts*) and, where important, more recent. Fully indexed.
- RAND, M. H. *and* KUBASCHEWSKI, O. 270
Thermochemical properties of uranium compounds. Edinburgh, London, O & B, 1963. x, 96p, tables, diags, bibliog. 30s.
C Critical compilation and evaluation of the thermochemical properties of uranium alloys and compounds, together with illustrations of the uses of thermochemical data in metallurgical problems.

55 Geology. Meteorology

271

INDUSTRIAL and exploratory geophysical prospecting: transactions (*trudy*) of the Ministry of Intermediate and Higher Specialized Education of the RSFSR, no. 31, [ed. by K. F. Zhigach and others], tr. from the Russian. NY, Consultants Bureau, [1963]. [5], 136p, illus, tables, diagrs, bibliog. \$17.50.

C Nineteen highly specialized research papers in which the emphasis is on techniques, methods of interpretation, and advanced analysis of data.

SMITH, E. K. and MATSUSHITA, S. eds

272

Ionospheric sporadic E. Oxford, NY [etc], Pergamon P, 1962 [i.e. Feb. 1963]. xiii, 391p, illus, tables, diagrs, bibliog. 5 gns. *International series of monographs on electromagnetic waves*, vol. 2.

C Highly specialized collection of research papers contributed by experts in ionospheric research and covering recent practical and theoretical investigations into the nature of sporadic E.

57 Anthropological and Biological Sciences

CRAGG, J. B.

273

Advances in ecological research; vol. 1. London, NY, Academic P, 1962. xi, 203p, tables, diagrs, bibliog. 45s.

C Four papers ranging from a specialized practical review of soil sampling for arthropods, to a general consideration of woodland ecosystems.

DARLINGTON, C. D. and LA COUR, L. F.

274

The handling of chromosomes. 4th ed. A & U, [1962]. 263p, plates, tables, diagrs, bibliog. 32s.

A Lucid and comprehensive coverage of modern methods of chromosome treatment, including photographic and autoradiographic. With its full bibliography, must be recommended to teachers and research workers.

HARVEY, D. G.

275

Biochemistry for veterinary students. Oxford, Blackwell Scientific Publications, 1962. xiv, 356p, tables, diagrs, bibliog. 2 gns.

B First book of its kind designed for the veterinary student, covering the chemistry, digestion, and metabolism of animal foodstuffs, rumination, vitamins, inorganic elements, hormones, and detoxication.

58 Botany

GLEASON, H. A. and CRONQUIST, A.

276

Manual of vascular plants of Northeastern United States and adjacent Canada. Princeton (NJ), London [etc], Van Nostrand, [©1963]. li, 810p. 92s.

A This is a very convenient and authoritative epitome of the latest and rather expensive edition (1953) of Britton and Brown's *Illustrated flora of the Northeastern United States*, and should serve as a most useful identification guide for all interested in the vegetation of the area.

59 Zoology

BARRINGTON, E. J. W.

277

Introduction to general and comparative endocrinology. Oxford, Clarendon P, 1963. xii, 387p, illus, plates, tables, diagrs, bibliog. 35s.

B Fascinating, well illustrated account of internal chemical communication systems primarily of vertebrates, crustacea, and insects; of great value and example to all students of physiology and zoology.

HARRIS, V. A.

278

Anatomy of the rainbow lizard *Agama agama* (L), with a glossary of anatomical terms. Hutchinson, 1963. 104p, illus, plate, diags, bibliog. 15s. *Hutchinson tropical monographs*. Paperback.

B Laboratory manual to guide students and teachers of zoology in the dissection and anatomy of the African Rainbow Lizard.

6 APPLIED SCIENCES

61 Health and Safety

BARNES, D. E. and TAYLOR, D.

279

Radiation hazards and protection, with a foreword by the late E. R. Carling. 2nd ed. Newnes, 1963. x,221p, illus, plates, tables, diags, bibliog. 35s.

B Intended for both workers with radioactive materials or radiation generators, and the non-specialist. Well written and illustrated, with clear descriptions of instrumentation.

MOTTRAM, V. H.

280

Human nutrition. 2nd ed. Arnold, 1963. xvi,324p, plates, tables, diags, bibliog. 36s.

B Well-known introduction collects and interprets into intelligible language research undertaken by biochemists, physiologists, chemists, agriculturists.

62 Engineering and Technology

JOHANSEN, K. W.

281

Yield-line theory: translated from the Danish. Cement & Concrete Association, [1962]. [8],181p, illus, tables, diags. 63s.

C Concerned with ultimate load method of design for flat slabs which is based on the fracture pattern (yield-lines) at failure.

621.039 NUCLEAR ENGINEERING

GLASSTONE, S. and SESONSKE, A.

282

Nuclear reactor engineering: prepared under the auspices of the Division of Technical Information, United States Atomic Energy Commission. Princeton (NJ), London [etc], Van Nostrand, [1963]. xiv,830p, illus, tables, diags, bibliog. 72s.

B Important book on fundamental principles of reactor systems, with emphasis on design and behaviour related to the fission process and radiation. Covers a wide range of topics and provides a broad perspective of reactor engineering.

INTERNATIONAL ATOMIC ENERGY AGENCY

283

Corrosion of reactor materials: proceedings of the conference on corrosion of reactor materials held by the . . . Agency at Europahaus, Salzburg, Austria, 4-8 June 1962. Vienna, the Agency, 1962. 2 v., illus, tables, diags, bibliog. 6 gns.

C For nuclear scientists, engineers, and reactor designers. Covers theoretical, experimental, and engineering aspects of corrosion phenomena in nuclear reactors and related equipment.

WORDSWORTH, A. D.

284

Nuclear fuel handling. Butterworths, 1963. viii,370p, illus, diags. 75s.

B Principles and practice of the design and installation of mechanisms for handling nuclear fuel elements; for mechanical engineers and others entering the field for the first time.

621.3 Electrical Engineering

- BARTON, J. J. 285
 Electric space heating: design and practice. Newnes, [1963]. vii, 199p, illus, tables, diagrs. 50s.
B Descriptions and applications of a wide range of electrical heating appliances and systems for both continuous use and 'off-peak' periods.

621.4 Internal Combustion Engines

- PURDAY, H. R. P. 286
 Diesel engine designing. Constable, [1963]. xvii, 426p, plate, tables, diagrs, bibliog. 3 gns.
C Practical book for the designer and senior student, well worthy of careful study. Not a new edition of *Diesel engine design*, which it replaces.
- WILKINSON, P. H. 287
 Aircraft engines of the world 1962/63. [Rev. ed.]. Washington, the Author; [London, Pitman], [©1962]. 288p, illus, tables. 110s.
A Handy reference manual containing photographs and technical information on all the many types and makes of aero engines manufactured throughout the world during 1962-3.

621.7 Workshop Practice

- LARKE, E. C. 288
 Rolling of strip, sheet and plate, with a foreword by M. Cook. 2nd ed. C & H, 1963. xiv, 449p, illus, tables, diagrs, bibliog. 70s.
B-C The book constitutes a sound theoretical and practical treatment of rolling, particular emphasis being laid upon the practical application of theoretical deductions.
- VOCABULARY of foundry practice in six languages: English/Czech/German/French/Polish/Russian. Oxford, NY [etc], Pergamon P; Warszawa, Naukowo-Techniczne, 1963. viii, 307p, diagrs. 120s. 289
D Contains 1,269 wide-ranging entries with definitions in English, and six indexes covering foundry practice, physical metallurgy, and allied subjects. Excellently fills a long-felt gap in the translator's armchairs.

621.9 Machine Tools

- HOUGHTON, P. S. 290
 Grinding wheels and machines. Spon, 1963. xi, 382, [10]p, tables, diagrs. 63s.
B Comprehensive, practical treatment substantially based on an adequate discussion of theory and general requirements in various types of grinding procedure; for students and production engineers.

622 Mining

- SINCLAIR, J. 291
 Planning and mechanized drifting at collieries. Pitman, 1963. vii, 358p, illus, tables, diagrs. 3 gns.
B Introduction to the proving of coal reserves, the planning of collieries, and mechanized drifting.

624 Structural Engineering

- ROWE, R. E. 292
Concrete bridge design. London, CR Books; NY, Wiley, 1962. 336p, plates, tables, diags, bibliog. 4 *gns*. With Supplement: Design curves. 34 graphs.
B-C Methods for designing concrete bridges, based upon orthotropic plate theory.
- WRIGHT, J. 293
Distribution methods of analysis. T & H, [1963]. [6], 165p, tables, diags. 35s.
B Comprehensive treatment of the application of moment distribution in the elastic analysis of structures. Numerous examples demonstrate the method's versatility.

65 Business Techniques. Management

- FOSTER, D. 294
Modern automation. Pitman in association with Rowse Muir, 1963. xi, 305p, illus, tables, diags. 2 *gns*.
A Comprehensive review of automation from both technical and social viewpoints. written by an acknowledged authority and including descriptions of a wide variety of industrial and commercial applications.

66 Chemical Technology

- BODSWORTH, C. 295
Physical chemistry of iron and steel manufacture. Longmans, 1963. xii, 497p, tables, diags, bibliog. 50s.
B Outstanding book treating the subject in considerable detail. The text is so devised as to have a wide range of appeal to both students and professional metallurgists.
- HICKS, E. 296
Shellac: its origin and applications. Macdonald, 1962 [i.e. Feb. 1963]. 272p, illus, tables, diags. 50s.
C Excellent reference work reviewing the origin, manufacture, and use of shellac, including analytical control, specifications, and detailed formulations covering its use in a number of industries.
- HOCKENHULL, D. J. D. *ed.* 297
Progress in industrial microbiology; vol. 4. Heywood, 1963. vii, 214p, plates, tables, diags, bibliog. 55s.
C Seven review articles, some specialized, others of interest to microbiologists generally, dealing with recent aspects of antibiotics, tissue-culture, hydrocarbon degradation, freeze-drying, and other topics.

- INSTITUTE OF FUEL 298
Waste-heat recovery: twenty-one chapters based on a conference held by the Institute of Fuel at Bournemouth in 1961. C & H for the Institute, 1963. xi, 406p, illus, tables, diags, bibliog. 4 *gns*.
B-C Modern survey of heat recovery practice including many new developments, of great value to the advanced student and qualified worker alike.

69 Building Industry

- CEMENT AND CONCRETE ASSOCIATION 299
Housing from the factory: proceedings of the conference held at Church House, London, on 4th and 5th October, 1962 under the auspices of the . . . Association. [General editor: B. Campbell.] The Association, [1963]. vi, 151p, illus, tables, diags. 40s.
B Useful summary of the present state of development of various continental and British systems of industrialized housing components in which concrete is the principal material.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
McG-H	McGraw-Hill
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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Aslib Book List

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with annotations

VOLUME 28 NUMBER 6

June 1963

Entries 300-362

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NO. 6

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- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

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VOLUME 28 . NUMBER 6 . JUNE 1963

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- FISZ, M. 300
Probability theory and mathematical statistics. 3rd ed. NY, London, Wiley, ©1963. xvi, 677p, tables, diagrs, refs. 115s.
B-C Excellent comprehensive introduction to probability theory and mathematical statistics, with applications extremely well illustrated by many worked examples.
- STEIN, S. K. 301
Mathematics: the man-made universe, an introduction to the spirit of mathematics. San Francisco, London, Freeman, ©1963. xiii, 346p, tables, diagrs, refs. 36s.
B Fundamental concepts of mathematics including modern abstract notions of set theory, algebra, and topology. For intelligent non-mathematicians.

52 Astronomy. Surveying. Geodesy

- FANNING, A. E. 302
Astronomy explained. MacGibbon & Kee, 1963. 189p, plates, tables, diagrs. 25s.
A Clearly written, non-technical outline of modern astronomy written by a former member of the staff of the London Planetarium. Good illustrations.
- MOORE, P. 303
Survey of the moon. Eyre & Spottiswoode, 1963. xiv, 333p, plates, diagrs. 25s.
A Up-to-date version of the author's *Guide to the moon*, 1953; virtually a new book describing modern knowledge of the lunar surface.
- RICHTER, N. B. 304
Nature of comets. Translated and rev. ed. by Arthur Beer, with an introduction and additional contributions by R. A. Lyttleton. Methuen, ©1963. xli, 221p, illus, tables, diagrs, bibliog. 3 gns.
B Recommended, up-to-date translation of *Statistik und physik der kometen*, 1954.

53 Physics and Mechanics

- BORG, S. F. 305
Matrix-tensor methods in continuum mechanics. Princeton (NJ), London, [etc], Van Nostrand, 1963. xiv, 313p, tables, diagrs, bibliog. 66s; 42s 6d paperback.
C Valuable text for engineering analysts interested in applying tensor methods to problems of continuum mechanics.
- BRADDICK, H. J. J. 306
Physics of experimental method: with a foreword by Professor P. M. S. Blackett. 2nd ed. C & H, 1963. xxiii, 480p, tables, diagrs, refs. 45s.
B Survey of laboratory methods, techniques, apparatus, and measurements employed in experimental investigations in colleges and industry.
- CAMBEL, A. B. and others 307
Real gases, by A. B. Cambel, D. P. Duclos, and T. P. Anderson. NY, London, Academic P, 1963. ix, 166p, diagrs, refs. 52s. *Engineering physics: an international series of monographs* ed. by A. B. Cambel and A. H. Shapiro, vol. 1.
C Summarizes and discusses many of the aspects of gas dynamics at high temperatures, including the Debye Huckel theory of ionized gases.

- DERYAGIN, B. V. *ed.* 308
Research in surface forces: authorized translation from the Russian. NY, Consultants Bureau, ©1963. [6], 190p, illus, tables, diagrs, refs. \$27.50.
C Papers of the Conference on Surface Forces, USSR Academy of Sciences, 1960. Diffusional and capillary forces, polymer adhesion, surface forces in their liquid films, surface effects in disperse systems, surface forces in aerosols.
- DEVELOPMENTS in theoretical and applied mechanics, vol. 1: proceedings of the first southeastern conference on theoretical and applied mechanics held at Gatlinburg, Tennessee, May 3-4, 1962. NY, Plenum P, 1963. xxiii, 519p, tables, diagrs, bibliog. \$16. 309
C Valuable compendium of thirty-three papers on modern research problems of engineering mechanics, covering dynamics and vibrations, solid mechanics, fluid mechanics, and experimental and applied mechanics.
- GAYDON, A. G. and HURLE, I. R. 310
Shock tube in high-temperature chemical physics. C & H, 1963. viii, 307p, plates, tables, diagrs, refs. 65s.
C Useful book covering basic theory and practice of shock-tube measurements and their application to spectra, chemical reactions, and detonations.
- LENGYEL, B. A. 311
Lasers: generation of light by stimulated emission. NY, London, Wiley, [©1962]. xi, 125p, tables, diagrs, bibliog. 55s. *Wiley series in pure and applied optics, adv. ed. S. S. Ballard.*
B Excellent introduction to the theory and technology of an important and rapidly growing subject.
- MCGRATH, I. A. and others, *eds* 312
Advances in magnetohydrodynamics: proceedings of a colloquium organized by the Department of Fuel Technology and Chemical Engineering at Sheffield University, October 1961. Ed. by A. I. McGrath, R. G. Siddall, and M. W. Thring. Oxford, NY, [etc], Pergamon P, 1963. x, 140p, diagrs, bibliog. 50s.
C Thirteen papers covering three aspects of MHD power generation, namely *i*, fundamental studies; *ii*, design studies of probable performance of various systems; *iii*, pilot plant investigations.
- PEARSE, R. W. B. and GAYDON, A. G. 313
Identification of molecular spectra. 3rd ed. C & H, 1963. xi, 347p, plates, tables, refs. 120s.
C Last ed. 1950. New material includes spectra of eighty-four molecules, improved data on 135 molecules, 350 additions to the table of persistent band heads. For spectroscopists.
- WEINBERG, F. J. 314
Optics of flames: including methods for the study of refractive index fields in combustion and aerodynamics. Butterworths, 1963. x, 251p, plates, diagrs, bibliog. 55s.
C Authoritative treatment of the theory and application of optical methods in combustion and allied research. Particular reference to schlieren and shadow methods, interferometry, and deflection mapping.
- 537 Electricity**
- ABRIKOSOV, N. Kh. *ed.* 315
Proceedings of the 4th all-union conference on semiconductor materials: authorized translation from the Russian. NY, Consultants Bureau, 1963. 139p, tables, diagrs, refs. \$17.50.
C Twenty-nine articles covering recent research in Russian laboratories on manufacture and physical, thermal, electrical, and thermodynamic properties of binary, ternary, and pseudo-binary semiconducting compounds.

- WILLIARDSON, R. K. and GOERING, H. L. eds 316
Compound semi-conductors; vol. 1, preparation of III-V compounds. NY, Reinhold, ©1962; London, C & H, [1963]. xxii,553p, illus, tables, diags, bibliog. 200s.

C Massive compilation of world-wide data and information with a 1,172-item bibliography. Of importance to chemists, physicists, metallurgists, and research workers in electronics.

539.1 Nuclear Physics

- BOLT, R. O. and CARROLL, J. G. eds 317
Radiation effects on organic materials: prepared under the auspices of the Division of Technical Information, United States Atomic Energy Commission. NY, London, Academic P, 1963. xv,576p, illus, tables, diags, refs. 96s 6d.

B-C Up-to-date documented survey designed primarily for engineers and technologists concerned with radiation resistance, radiation processing of materials, and some of the underlying principles.

54 Chemistry

- BARKER, J. A. 318
Lattice theories of the liquid state. Oxford, NY, [etc], Pergamon P, 1963. [10], 133p, illus, tables, diags, refs. 50s. *The international encyclopedia of physical chemistry and chemical physics: topic 10 The fluid state, vol. 1.*

D First of about 100 volumes of a comprehensive modern account of all aspects of the domain of science between chemistry and physics, with a strong fundamental bias.

- CURIE, D. 319
Luminescence in crystals, tr. by G. F. J. Garlick. London, Methuen; NY, Wiley, ©1963. xi,332p, tables, diags, bibliogs. 50s.

C Concise review of luminescence phenomena with theoretical explanations. Excellent guide for research physicists.

- SZYMANSKI, H. A. ed. 320
Lectures on gas chromatography 1962: based on lectures presented at the advanced sessions of the fourth annual gas chromatography institute held at Canisius College, Buffalo, New York, April 23-26, 1962. NY, Plenum P, 1963. [6],282p, tables, diags. \$10.

B-C Thirteen papers based on lectures by American authors followed by panel discussion dealing largely with the different items of equipment and with the application of the technique.

55 Geology. Meteorology

- HAUGHTON, S. H. 321
Stratigraphic history of Africa south of the Sahara. Edinburgh, London, O & B, 1963. xii,365p, illus, tables, refs. 3 gns.

B Valuable summary of our present knowledge of the geology of this area, brought together in English for the first time.

- JOHNSON, G. A. L. and DUNHAM, K. C. 322
Geology of Moor House: a national nature reserve in north-east Westmorland. HMSO, 1963. xviii,182p, plates, tables, diags, bibliog. 55s. *Monographs of the Nature Conservancy no. 2.*

A-C Uniquely detailed description of the solid geology, surface rocks, and pre-history of a small area of Northern Pennine Moorlands.

- PENMAN, H. L. 323
Vegetation and hydrology. Farnham Royal (Bucks), Commonwealth Agricultural Bureaux, 1963. v,[3], 124p, tables, bibliog. 20s. *Commonwealth Bureau of Soils technical communication no. 53.*

C Excellent critical review of the literature concerned with water uses by vegetation and the part played by surface ground cover in the disposal of rain.

57 Anthropological and Biological Sciences

- FREEMAN, W. H. and BRACEGIRDLE, B. 324
Atlas of embryology. London, Toronto, [etc], Heinemann, 1963. [96]p, illus, diags. 18s.

B Admirable manual showing how to interpret and draw sections through frog and chicken embryos, as is required for GCE 'A' level, 1st MB, and first degrees in zoology.

- SOCIETY FOR GENERAL MICROBIOLOGY 325
Symbiotic associations: thirteenth symposium of the Society . . . held at the Royal Institution, London, April 1963. CUP for the Society, 1963. x, 356p, plates, tables, diags, refs. 50s.

C Fifteen articles by eminent authors, each dealing with a different example of symbiosis between a micro-organism (virus, alga, fungus, protozoan, or bacteria) with another organism (plant, protozoan, arthropod, or vertebrate).

58 Botany

- BARON, W. M. M. 326
Organisation in plants. Arnold, 1963. ix, 202p, illus, tables, diags, bibliog. 25s.

B Lucid account of plant physiology viewed against a background of ecology and genetics with ample reference to recent experimental techniques and results.

59 Zoology

- BROWNING, T. O. 327
Animal populations. Hutchinson, 1963. 127p, tables, diags, bibliog. 12s 6d.

B Simple introduction to the quantitative study of the factors influencing changes in animal populations. Valuable but brief volume for serious beginners.

- FINGERMAN, M. 328
Control of chromatophores. Oxford, NY, [etc], Pergamon P, 1963. ix, 184p, illus, tables, diags, bibliog. 50s. *International series of monographs on pure and applied biology: zoology division, vol. 14.*

C Valuable, specialist, physiological account of the control of animal colour changes with particular reference to recent work with invertebrates—crustaceans, insects, cephalopods, and echinoderms.

- GOODEY, T. 329
Soil and freshwater nematodes, 2nd ed. rev. and rewritten by J. B. Goodey. London, Methuen; NY, Wiley, 1963. xvi, 544p, illus, tables, diags, bibliog. 100s.

C Highly detailed, systematic account describing all genera living in soil and freshwater which, in these habitats, may be plant-parasitic or free-living.

- LAVERACK, M. S. 330
Physiology of earthworms. Oxford, NY, [etc], Pergamon P, 1963. ix, 206p, tables, diags, bibliog. 45s. *International series of monographs on pure and applied biology: zoology division, vol. 15.*

B Rewarding monograph for those who know the earthworm only from the inadequate and often inaccurate accounts in the comprehensive textbooks of zoology and biology.

- PITELKA, D. R. 331
Electron-microscopic structure of protozoa. Oxford, NY, [etc], Pergamon P, 1963. x, 269p, plates, diags, bibliog. 4 gns. *International series of monographs on pure and applied biology: zoology division, vol. 13.*

C Stimulating and reasonably comprehensive review collating information on the ultra-structure of single-cell animals. Invaluable to protozoologists.

- ZOOLOGICAL SOCIETY OF LONDON 332
 Comparative aspects of neurohypophysial morphology and function: proceedings of a symposium held at the . . . Society . . . , on 8th February, 1962. Edited . . . by H. Heller. The Society, 1963. [10], 183p, illus, tables, diagrs, refs. 50s. *Symposia of the Zoological Society of London, number 9.*
 C Nine papers describe the last fifteen years' research upon a single endocrine organ, the hypothalamo-neurohypophysial complex.

6 APPLIED SCIENCES

621 *Mechanical and Electrical Engineering*

- DOUCE, J. L. 333
 Introduction to the mathematics of servomechanisms. EUP, 1963. x, 240p, diagrs, bibliog. 25s. *Applied mathematics series.*
 B Guide to mathematical techniques of describing behaviour of automatic control systems with emphasis on the physical significance of the equations. For undergraduates and post-HNC students.

- EVANS, E. A. 334
 Lubricating and allied oils. 4th ed. C & H, 1963. vii, 234p, tables, diagrs, bibliog. 30s.
 A Comprehensive treatment, including the manufacture, testing, selection, and application of modern lubricants. Of particular value to the lubricant user wishing to gain some knowledge of the materials available.

- INSTITUTION OF METALLURGISTS 335
 Heat treatment of metals: lectures delivered at the Institution of Metallurgists refresher course, 1962. Iliffe for the Institution, 1963. 155p, plates, tables, diagrs, refs. 35s.
 B Valuable papers by leading authorities surveying the present state of fundamental knowledge in a field in which development has so far been largely empirical.

- MATOUSEK, R. 336
 Engineering design: a systematic approach. Blackie, ©1963. viii, 264p, tables, diagrs, bibliog. 45s.
 B One of today's topics discussed from German standpoint, providing thought-provoking and useful reading for general engineering students and design engineers.

621.3 *Electrical Engineering* 337

- AMERICAN miniature and microminiature electronic assemblies data annual 1962-63, ed. by G. W. A. Dummer and J. M. Robertson. Oxford, NY, [etc], Pergamon P, 1963. xii, 359p, illus, tables, diagrs. 5 gns.
 D As the concise information and applications data given are uniquely published, very useful to electronic engineers, particularly when used in conjunction with other volumes in this series.

- CHATTERJEE, B. 338
 Pulse circuits. Asia Publ. House, [1963]. viii, 159p, tables, diagrs, bibliog. 25s.
 B Mathematical approach to most types of pulse and associated circuits for students of television and radio aids in navigation in Indian technical colleges.

- HOROWITZ, I. M. 339
 Synthesis of feedback systems. NY, London, Academic P, ©1963. xiv, 726p, tables, diagrs. 118s.
 C Theoretical and mathematical treatise ably extending Bode's earlier work. Particular value in research laboratories.

- ROGINSKII, V. N. 340
Synthesis of relay switching circuits, tr. by W. Chrzczonowicz. Princeton (NJ), London, [etc], Van Nostrand, ©1963. 184p, tables, diagrs, bibliog. 50s.
C Authoritative work on the scientific methods available for the structural synthesis of switching systems, based on the theory of relay-contact circuits. For control and telecommunication engineers.

- WOLFENDALE, E. 341
Transistor: an introduction to its applications. Heywood, 1963. vii, 168p, diagrs. 40s.
A-B Reputation of the author lends attraction to this readily understandable book which covers all main topics, with a helpful order of subjects.

624 Structural Engineering

- COX, H. L. 342
Buckling of plates and shells. Oxford, NY, [etc], Pergamon P, 1963. ix, 128p, tables, diagrs, refs. 40s. *International series of monographs on aeronautics and astronautics: division 1, solid and structural mechanics, vol. 4.*
C Survey of the stability and mechanics of deformation of plates and shells under compressive loading. This excellent work provides the basis for a thorough understanding of the theory.
- PEQUIGNOT, C. A. ed. 343
Tunnels and tunnelling. Hutchinson, 1963. xii, 555p, illus, tables, diagrs, refs, bibliog. 10 gns.
C Comprehensive coverage of all aspects of great value to students and engineers. Twenty-nine-page bibliography.

629.1 Transport Engineering

- EHRRICKE, K. A. 344
Space flight; 2, dynamics. Princeton (NJ), London, [etc], Van Nostrand, 1963. xxi, 1210p, illus, tables, diagrs, bibliog. 230s. *Principles of guided missile design.*
C Second volume of a comprehensive and detailed trilogy covering the powered and free-flight trajectories of ballistic vehicles, artificial satellites, and interplanetary vehicles.
- MEULEN, C. van der 345
Aircraft maintenance: electrical, instrument, and radio. Hewyood, 1963. x, 326p, illus, plates, tables, diagrs. 120s.
B-C Broad in outlook but detailed coverage of maintenance and overhaul of electrical systems, instruments, and radio installations; intended for the aspiring maintenance engineer, but will interest other engineers.
- MUCKLE, W. 346
Design of aluminium alloy ships' structures. Hutchinson for the Aluminium Development Association, 1963. 264p, plates, tables, diagrs, bibliog. 3 gns.
C Correlates all current information on the subject, particularly superstructures. Important book for students and naval architects.

65 Business Techniques. Management

- HURST, C. A. and LAWRENCE, F. R. 347
Letterpress: composition and machine-work. Benn, 1963. xi, 180p, plates, tables, diagrs. 1 gn.
B Recommended readable textbook on the subject with good diagrams and up-to-date approach generally clearly expressed. For students and apprentices.
- WILLSMORE, A. W. 348
Modern production control. 3rd ed. Pitman, 1963. xiv, 215p, tables, diagrs. 18s.
B Revision of a standard textbook which outlines basic principles and procedures.

66 Chemical Technology

- FISK, P. M. 349
 Physical chemistry of paints. Leonard Hill, 1963. ix, 133p, diags. 25s.
B Excellent concise review intended for students and newcomers to the industry.
- GRISWOLD, R. M. 350
 Experimental study of foods. Boston, Palo Alto, [etc], Houghton Mifflin Company, ©1962; [London, Constable, 1963]. ix, 577p, illus, tables, diags, refs. 57s 6d.
A-B Well-documented introduction to food science and experimentation with useful chapters on the evaluation of food by sensory and objective methods.
- HADLEY, W. A. and LONGOBARDO, G. 351
 Automatic process control. Pitman, 1963. vii, 307p, tables, diags. 45s.
B Combined theoretical and practical approach to the automatic control of thermal and chemical processes found in mechanical and chemical engineering. Study is mathematical and graphical. For students and engineers.
- HARLER, C. R. 352
 Tea manufacture. OUP, 1963. viii, 126p, plates, tables, diags. 16s. *Oxford tropical handbooks*.
A Excellent little manual on tea preparation and manufacture, with sections on grading, tasting, and chemistry and pharmacology. Two glossaries of terms used in the industry.
- KELLY, A. and NICHOLSON, R. B. 353
 Precipitation hardening. Oxford, Paris, [etc], Pergamon P, ©1963. 149-391p, illus, tables, diags, refs. 60s. *Progress in materials science (incorporating progress in metal physics)* ed. by B. Chalmers, vol. 10, no. 3, 1963.
B-C Experimental studies of structure and properties of age-hardening alloys, together with theoretical aspects and qualitative conclusions.
- KOROL'KOV, A. M. 354
 Casting properties of metals and alloys; tr. from the Russian. NY, Consultants Bureau, [1963]. [5], 146p, illus, tables, diags, bibliog. \$22.50. Paperback.
C Valuable attempt to correlate the characteristic structure and properties of liquid metals with their behaviour in the production of commercial castings, a field which has generally received less attention than it deserves.
- MARSDEN, C. and MANN, S. 355
 Solvents guide. 2nd ed. Cleaver-Hume, 1963. xvi, 633p, tables. 5 gns.
D Extended and thoroughly revised edition of the *Solvents manual* published in 1954, with improved typography and layout.
- ROBERSON, E. C. and HERBERT, R. 356
 Fuel: the conquest of man's environment. Hutchinson, 1963. 128p, plates, diags. 12s 6d.
A-B Concise review of the origin and nature of fuel (coal, petroleum, nuclear) and the utilization of fossil fuels, derived fuels and by-products, wind and water power, and solar energy. New methods of using fuels, e.g. gas turbine, fuel cells, are considered.
- 357
 WASTE-HEAT recovery: twenty-one chapters based on a conference held by The Institute of Fuel at Bournemouth in 1961. C & H for the Institute, 1963. xi, 406p, tables, diags, refs. 4 gns.
B-C Theory of heat production and transfer presented concisely as a basis for the subsequent detailed treatment of ways of improving thermal processes in industry to reduce fuel and thus manufacturing costs and to conserve fuel resources.

67/68 Manufactures

- KOCH, P.-A. 358
Microscopic and chemical testing of textiles: a practical manual, tr. from the German by C. J. W. Hooper. C & H, 1963. xiii, 217p, tables, refs. 65s.
B Practical manual listing reagents and methods for microscopic, chemical, and dyeing tests on textiles in a form convenient for laboratory reference.
- SCHMIDLIN, H. U. 359
Preparation and dyeing of synthetic fibres, tr. by the late W. Meitner and A. F. Kertess. C & H, 1963. xi, 462p, illus, tables, diagrs. 75s.
B Original Swiss text of 1958 greatly extended and revised in translation. Comprehensive account for dyers and their technologists, students.

681 Precision Mechanisms

- NATIONAL PHYSICAL LABORATORY 360
1961 international conference on machine translation of languages and applied language analysis: proceedings of the conference held at the . . . Laboratory, Teddington, Middlesex, on 5th, 6th, 7th and 8th September. HMSO, 1962. 2v. vii, 747p, tables, diagrs, bibliogs. 50s.
C Thirty-six papers printed in full, with reports on their discussions, cover aspects of linguistics interesting to others than those attempting machine translation; essential to the latter.
- SMITH, R. E. and JOHNSON, D. E. 361
FORTRAN autoserter. NY, London, Wiley, ©1962. [4], 176, [3]p, tables, diagrs. 1 *gn*.
C Intended to teach the FORTRAN computer language to the scientist or engineer with previous experience in programming.
- YERSHOV, A. P. and others 362
Input language for automatic programming systems, by A. P. Yershov, G. I. Kozhukhin, and U. M. Voloshin. Authorized translation from the Russian, with an introduction by R. W. Hockney. NY, London, Academic P, for the Automatic Programming Information Centre, Brighton College of Technology, England, 1963. ix, 70p. 25s. *APIC studies in data processing*, no. 3.
C Expansion of the international computer-programming language ALGOL 60 is described in the form of a set of recommendations.

Publishers

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A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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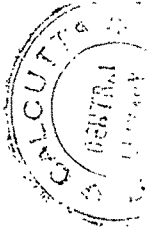
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5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- GRADSHTEIN, I. S. 363
Direct and converse theorems: the elements of symbolic logic, tr. from the Russian by T. Boddington. Oxford, NY, [etc], Pergamon P, 1963. xviii,173p, diags. 30s. *International series of monographs in pure and applied mathematics, vol. 27.*
B Discussion of the nature of propositions, their converses and inverses, illustrated by simple worked and unworked exercises, leading to an elementary account of mathematical logic.
- HALL, G. G. 364
Matrices and tensors. Oxford, NY, [etc], Pergamon P, 1963. xi,106p, tables, diags, bibliog. 2 gns. *The international encyclopedia of physical chemistry and chemical physics: topic 1, mathematical techniques, vol. 4.*
B Written for graduate chemists, physicists, and engineers, this book gives the basic theory of vectors, matrices, and tensor algebra with methods of solving linear equations and eigenvalue problems adequate for numerical application.
- STEIN, F. M. 365
An introduction to vector analysis. NY, [London], Harper & Row, ©1963. xii,209p, diags. 44s. *Harper's mathematics series.*
B Presents three-dimensional vector theory with applications in mechanics and space motion, with worked examples and exercises. For undergraduates in physics and engineering.

52 Astronomy. Surveying. Geodesy

- EVANS, J. W. ed. 366
The solar corona: proceedings of International Astronomical Union symposium no. 16, held at Cloudcroft, New Mexico, USA, 28-30 August 1961. NY, London, Academic P, 1963. xi,344p, illus, tables, diags, refs. 100s.
C Comprehensive survey of recent research, mainly of interest to astrophysicists and those working in the field of plasma physics.

53 Physics and Mechanics

- BLITZ, J. 367
Fundamentals of ultrasonics. Butterworths, 1963. ix,214p, tables, diags, refs. 35s.
B Suitable for students in the final year of university degree and Diploma courses in physics, but useful also as an introduction to the subject.
- HSU, S. T. 368
Engineering heat transfer. Princeton (NJ), London, [etc], Van Nostrand, ©1963. xiii,613p, tables, diags, refs. 90s.
C Comprehensive account of heat transfer processes, with special emphasis on practical problems and methods for their solution.
- IBELE, W. ed. 369
Modern developments in heat transfer. NY, London, Academic P, 1963. xii, 493p, tables, diags, refs. 128s 6d.
C Useful set of lectures by leading authorities reviewing and describing recent developments.

LORD, P. and THOMAS, F. L. eds

370

Noise measurement and control. Heywood, 1963. viii,217p, plates, tables, diags, refs. 2 gns.

A Expanded version of lectures given at the Royal Technical College in 1961; covers selected aspects of hearing, measurement, and noise control at a standard suitable for non-specialists.

SEITZ, F. and TURNBULL, D. eds

371

Solid state physics: advances in research and applications; vol. 14. NY, London, Academic P, 1963. xv,519p, tables, diags, refs. 114s 6d.

C Detailed theoretical reviews for specialists of current developments in the following fields: spin-lattice relaxation of conduction electrons in metals and semi-conductors; magnetic exchange interactions in insulators and semi-conductors; ESR spectroscopy in molecular solids; molecular motion in solid polymers.

SEITZ, F. and TURNBULL, D. eds

372

Solid state physics: advances in research and applications; suppl. 3, theory of lattice dynamics in the harmonic approximation, by A. A. Maradudin, E. W. Montroll, G. H. Weiss. NY, London, Academic P, 1963. viii,319p, tables, diags, refs. 80s.

C Detailed authoritative account of the theory of lattice dynamics, effects of surfaces, defects, and disorder on the vibrational frequency spectrum and scattering of X-rays and slow neutrons by lattice vibrations.

539.1 Nuclear Physics

ALIKHANOV, A. I.

373

Recent research on beta-disintegration, tr. from the Russian by W. E. Jones. Oxford, NY, [etc], Pergamon P, 1963. xxv,130p, tables, diags, refs. 20s. *International series of monographs on nuclear energy: division II, nuclear physics, vol. 12.*

C Results of investigations made in 1957-9 into beta-disintegration connected with the discovery of non-conservation of parity in weak interactions.

GREEN, T. S.

374

Thermonuclear power. Newnes, 1963. [8],168p, illus, tables, diags, bibliog. 45s.

C Concise review of theoretical and experimental research in plasma physics and controlled thermonuclear fusion up to end of 1961.

NEMIROVSKII, P. E.

375

Contemporary models of the atomic nucleus, tr. from the Russian by S. and M. Nikolic. Translation ed. by B. T. Feld. Oxford, NY, [etc], Pergamon P, 1963. xii,332p, tables, diags, bibliog. 100s.

C Advanced nuclear physics, with emphasis on shell model, collective nuclear model, and optical model of the atomic nucleus.

54 Chemistry

AMERICAN CHEMICAL SOCIETY. Division of Inorganic Chemistry

376

Reactions of coordinated ligands and homogeneous catalysis: a symposium sponsored by the Division. . . at the 141st meeting of the American Chemical Society, Washington, DC, March 22-24, 1962. D. H. Busch, symposium chairman. Washington (DC), the Society, 1963. vii,255p, tables, diags, refs. \$7. *Advances in chemistry series, no. 37.*

B-C Eighteen miscellaneous papers on the chemistry of complexes, ranging from general accounts of ligand reactivity, through studies of particular types of co-ordination, to results obtained with specific systems.

- DEAN, F. M. 377
Naturally occurring oxygen ring compounds. Butterworths, 1963. viii, 661p, tables, refs. 120s.
C Excellent comprehensive review of the whole chemistry of the subject, together with some brief mention of the biological activities of some of the compounds mentioned.
- FINAR, I. L. 378
Organic chemistry; vol. 1, the fundamental principles. 4th ed. Longmans, 1963. xv, 853p, refs. 50s.
B Revision of a standard, highly regarded textbook for honours degree chemistry students.
- HAHN, R. B. and WELCHER, F. J. 379
Inorganic qualitative analysis: a short course for introductory chemistry. Princeton (NJ), London, [etc], Van Nostrand, ©1963. ix, 304p, tables, diagrs. 39s.
B Teaching manual covering theory and practice of semi-micro qualitative analysis for the common anions and cations, with questions on each topic, suitable for a fifteen-week elementary laboratory course.
- HAWES, B. W. V. and DAVIES, N. H. 380
Calculations in physical chemistry. EUP, 1962 [i.e. May 1963]. xiv, 203, [3]p, tables. 10s 6d. Paperback. *Chemical science texts*.
B Almost 400 numerical exercises, many with explanatory notes, for students preparing for HNC and Parts I and II examinations for Graduate Membership of the Royal Institute of Chemistry.
- LAIDLER, K. J. 381
Reaction kinetics; vol. 1, homogeneous gas reactions; vol. 2, reactions in solution. Oxford, NY, [etc], Pergamon P, 1963. 2 vols. tables, diagrs, bibliogs. 1 gn; 17s 6d. *Commonwealth and international library of science, technology, engineering and liberal studies, nos. 109 and 110: chemistry division, vols. 1 and 2*.
B Two of four volumes in soft covers, giving an extended treatment of kinetics for those previously unacquainted with the subject, by an eminent authority and teacher.
- MELLOR, J. W. 382
Comprehensive treatise on inorganic and theoretical chemistry; vol. II, suppl. III, the alkali metals, part 2. Longmans, 1963. xvii, 1459-2599p, tables, refs. 300s.
C This supplement deals with chemistry of potassium, rubidium, and caesium, and has a chapter on the radiochemistry of the alkali metals which also describes the properties of francium.
- NECHAMKIN, H. 383
Problems in inorganic chemistry. Princeton (NJ), London, [etc], Van Nostrand, ©1963. ix, 171p, diagrs. 30s. Paperback.
B Numerical and descriptive problems, together with the factual matter on which they are based, and specimen problems fully worked, suitable for sixth-form and early undergraduate study.
- 549 Mineralogy**
- DEER, W. A. and others 384
Rock-forming minerals, by W. A. Deer, R. A. Howie, and J. Zussman; vol. 4, framework silicates. Longmans, 1963. ix, 435p, tables, diagrs, refs. 95s.
B-C Very valuable compilation, critical assessment, and correlation of mainly modern data on the structure, composition, paragenesis, and optical and physical properties of rock-forming minerals.
- GINZBURG, A. I. ed. 385
New data on rare element mineralogy: authorized translation from the Russian. NY, Consultants Bureau, ©1963. [4], 140p, illus, tablès, bibliog. \$17.50.
C Useful compilation of recent (largely Russian) work on mineralogy of rare elements. Review article on paragenesis followed by papers on properties of these minerals, or their varieties; occurrences in granite and alkali pegmatites.

55 Geology. Meteorology

- CHARLESWORTH, J. K. 386
 Historical geology of Ireland. Edinburgh, London, O & B, 1963. xxiii, 565p, illus, diags, bibliog. 4 gns.

B Up-to-date synthesis valuable to university students as a comprehensive summary and guide to the literature.

- FURON, R. 387
 Geology of Africa, tr. by A. Hallam and L. A. Stevens. Edinburgh, London, O & B, 1963. xii, 377p, illus, refs. 50s.

B Very useful translation of the latest (1960) revised edition of Professor Furon's unique and stimulating general stratigraphic account.

- JUNGE, C. E. 388
 Air chemistry and radioactivity. NY, London, Academic P, 1963. xii, 382p, tables, diags, refs. 96s 6d. *International geophysics series*, vol. 4.

C Up-to-date, critical, and authoritative work of great value to physicists and chemists concerned with the constitution of the atmosphere; interesting recent work on radioactive fallout is included.

- LANDMARK, B. *ed.* 389
 Advances in upper atmosphere research: papers presented at the NATO advanced study institute at Corfu, July 1960. Oxford, NY, [etc], Pergamon P, for Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization, ©1963. vii, 340p, plates, tables, diags, refs. 80s.

B Twenty papers at varying levels, all concerned with ionization, including aurora and geomagnetic effects.

- MARINE sciences instrumentation; vol. 2, proceedings of the symposium on transducers for oceanic research held November 8-9, 1962, at San Diego, California. Editor, R. D. Gaul. . . NY, Plenum P, for the Instrument Society of America, [©1963]. viii, 195p, illus, tables, diags, refs. \$10.

C Recent advances in development of instruments for measuring electrical conductivity, salinity, density, temperature, pressure, wave height, fluid motion, sound velocity, and light penetration at sea.

57 Anthropological and Biological Sciences

- GRANT, J. K. *ed.* 391
 Methods of separation of subcellular structural components: Biochemical Society symposium. . . held jointly by the Biochemical Society of Great Britain and the Société Belge de Biochimie in the Physiological Institute, the University of Louvain, Belgium, on 11 May 1962. CUP, 1963. [6], 157p, plates, tables, diags, refs. 35s. *Biochemical Society symposia*, no. 23.

C Series of papers devoted to the scope, limitations, and methods of cell fractionation employed in biochemical and structural studies of subcellular components.

- LEWIS, K. R. *and* JOHN, B. 392
 Chromosome marker. Churchill, 1963. x, 489p, tables, diags, bibliog. 65s.

C Detailed survey of characteristics and behaviour of plant and animal chromosomes in relation to cell-division, heredity, development, and evolution.

- SEAMAN, A. 393
 Bacteriology for dairy students. Cleaver-Hume P, 1963. vii, 202p, tables, diags, refs. 25s.

B As an introduction to bacteriology for those training for the dairy and allied industries this book is an important addition to the rather meagre selection at present available.

59 Zoology

- BARNETT, S. A. 394
 A study in behaviour: principles of ethology and behavioural physiology, displayed mainly in the rat. Methuen, 1963. xvi, 288p, illus, plates, diags, bibliog. 45s.
 A Clearly written survey of rat behaviour intended for interested laymen as well as specialists.
- GRAHAM, K. 395
 Concepts of forest entomology. NY, Reinhold; London, C & H, ©1963. xii, 388p, illus, tables, diags, bibliog. 76s.
 B Place of entomology in the field of forest preservation is surveyed, with an explanation of the theory and general methods of forest damage control.
- LEFTWICH, A. W. 396
 A student's dictionary of zoology. Constable, ©1963. 289p. 30s.
 D Useful concise definitions of 4,500 zoological terms, including the principal phyla and classes of animals, with an appendix on classification and nomenclature.

6 APPLIED SCIENCES**61 Health and Safety**

- SINCLAIR, T. C. 397
 Control of hazards in nuclear reactors. Temple P, 1963. vii, 84p, tables, diags, bibliog. 15s. *Nuclear engineering monographs*.
 B Safety considerations in design and operation of a nuclear power reactor from viewpoint of radiation damage and hazards to personnel.

62 Engineering and Technology

- FROCHT, M. M. *ed.* 398
 Photoelasticity: proceedings of the international symposium held at Illinois Institute of Technology, Chicago, Illinois, October 1961. Sponsored by US Army Research Office (Durham), National Science Foundation, and Illinois Institute of Technology. Oxford, NY, [etc], Pergamon P, 1963. xxi, 294p, illus, tables, diags, refs. 90s.
 C Interesting compilation of papers on modern techniques in stress analysis. Valuable to research engineers in this field.

621 Mechanical and Electrical Engineering

- SPINKS, W. S. 399
 Vacuum technology. C & H, 1963. x, 126p, plates, tables, diags, bibliog. 12s 6d.
 B Based on lecture notes for an introductory course for mechanics and technicians responsible for large installations, a simple account of techniques and problems encountered in producing high vacuum.
- SWANSON, S. A. V. 400
 Engineering dynamics. EUP, 1963. xiv, 348p, diags. 25s. *General engineering series*.
 B Useful text covering the first two years of university courses in most branches of engineering.

621.039 NUCLEAR ENGINEERING

- DE-SHALIT, A. and TALMI, I. 401
 Nuclear shell theory. NY, London, Academic P, 1963. x, 573p, tables. 103s 6d.
 B-C Comprehensive textbook for graduate students with knowledge of elementary quantum mechanics. In three parts: Single-particle shell model; tensor algebra. Two-particle systems. Three- or more particle systems.

- LEYMONIE, C. 402
Radioactive tracers in physical metallurgy, foreword by P. Lacombe, tr. by V. Griffiths. C & H, 1963. xiv, 208p, plates, tables, diags, bibliogs. 45s.

B-C Review and discussion of the use of radioisotopes as a research tool for facilitating study of segregation, surface mechanisms, thermodynamics of metallic systems, and, in particular, diffusion.

- PEARSON, F. J. ed. 403
Nuclear power technology. London, NY, [etc], OUP, 1963. xix, 355p, tables, diags, bibliog. 2 gns.

B Broad introduction to the principal topics at about first-year degree level.

621.3 Electrical Engineering

- GEFFE, P. R. 404
Simplified modern filter design. NY, Rider, ©1963. xi, 182p, tables, diags. \$8.75. *Electrical engineering monograph series*.

B Useful handbook for the circuit engineer, enabling him to design many types of pass band filters without tedious calculation. Numerous precalculated tables, many for elliptic function filters; delay equalizers and inductor design also considered.

- LURCH, E. N. 405
Electric circuits. NY, London, Wiley, ©1963. xiii, 565p, tables, diags, refs. 57s.

B General first-course non-specialized introduction to network analysis with chapters on electric and magnetic field theory. Questions, problems, answers. For students commencing electricity.

- PROGRESS in dielectrics; vol. 5, gen. ed. J. B. Birks, American ed. J. Hart. Heywood, 1963. vii, 368p, plates, tables, diags, refs. 80s.

C Highly advanced theory and applications of dielectric materials in advanced electronic and electrical engineering.

- STUDER, J. J. 407
Electronic circuits and instrumentation systems. NY, London, Wiley, ©1963. xiii, 423p, diags, bibliog. 80s.

B Integrated elementary presentation of electric circuits, basic electronics, and systems of electronic instrumentation. Emphasis on signed transfer devices and general system concepts. For students of engineering and the physical sciences.

- WHITE, H. J. 408
Industrial electrostatic precipitation. Reading (Mass), London, [etc], Addison-Wesley; Oxford, NY, [etc], Pergamon P, 1963. vii, 376p, tables, diags, refs. 94s.

C Comprehensive survey of theory and practice mainly in the USA.

- YOUNG, G. J. ed. 409
Fuel cells; vol. II, a symposium held by the Divisions of Fuel Chemistry and Petroleum Chemistry of the American Chemical Society at the 140th national meeting in Chicago. NY, Reinhold; London, C & H, 1963. v, 225p, tables, diags, refs. 64s.

B-C Comprehensive treatment of a method of converting chemical energy directly to electrical energy, considering theory, development, and economics of high- and low-temperature systems using liquid and gaseous fuels.

- ZEPLER, E. E. and PUNNETT, S. W. eds 410
Electronic circuit techniques: written by a team of contributors from the Department of Electronics, University of Southampton, . . . London, Glasgow, Blackie, 1963. [12], 212p, diags, refs. 35s. *Electronic user series*.

B Monograph dealing with the fundamental operation and use of electron circuits. Also discusses various single- and multi-stage units to be built with components already described in companion volume, *Electronic devices & networks*.

- ZEPPLER, E. E. and PUNNETT, S. W. eds** 411
 Electronic devices & networks: written by a team of contributors from the Department of Electronics, University of Southampton, . . . London, Glasgow, Blackie, 1963. vi,[6],217p, diagrs, bibliog. 35s. *Electronic user series*.
B Monograph dealing with fundamental principles and details of active and passive components. Useful for research and industrial workers and students.
- 621.7 Workshop Practice**
- HAMMOND, R.** 412
 Automatic welding. Redman, ©1963. ix,401p, plates, tables, diagrs, bibliog. 3 gns.
B Thorough treatment of technological aspects, with examples of applications in ship-building and nuclear power. Useful to both design and production engineers.
- 628 Public Health Engineering**
- INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY.** 413
 Applied Chemistry Section. *Water, Sewage and Industrial Wastes Division*
 Re-use of water in industry: a contribution to the solution of effluent problems. Butterworths, 1963. ix,247p, plates, tables, diagrs, refs, bibliogs. 55s.
B Reports dealing with conservation and re-use of water in the coal industry, iron and steel works, metal-pickling plant, electroplating and heavy chemical industries, sugar factories.
- 629.1 Transport Engineering**
- CUMMINGS, C. I. and LAWRENCE, H. R.** 414
 Technology of lunar exploration: a selection of technical papers based mainly on the American Rocket Society lunar missions meeting held at Cleveland, Ohio, July 17-19, 1962. NY, London, Academic P, for the American Institute of Aeronautics and Astronautics, 1963. xv,989p, tables, diagrs, refs. 98s 3d. *Progress in astronautics and aeronautics, vol. 10*.
C Describes nature and composition of the moon, launch, mid-course and rendezvous techniques, spacecraft systems and techniques, lunar landing, lunar launch, return, re-entry and landing. Progress reports on *Ranger*, *Surveyor*, *Saturn*, and *Apollo* projects.
- WILLIAMS, C. A.** 415
 Aircraft instrument control systems. Odhams, 1963. 320p, illus, diagrs. 45s. *Odhams books on aircraft engineering*.
B Useful study manual for instrument maintenance engineers on equivalent modern equipment of English and American manufacture used in navigation and automatic control.
- 63 Agriculture. Forestry. Livestock. Fisheries**
- COLLINS, P.** 416
 Fertilisers. Overseas Development Institute, 1963. 68p. 5s. Paperback.
A Concise study of economic, technical, and social problems involved in extending the use of fertilizers in developing countries, and of factors governing the choice between imports and local manufacture.
- DUCKHAM, A. N. ed.** 417
 Farming. Caxton, 1963. 4 vols. illus, plates, tables, diagrs. 300s.
B Aims to help all those who live on or by the land. The publishers and editor feel that such people need a reliable and up-to-date book which states clearly practice and procedure.
- JANICK, J.** 418
 Horticultural science. Freeman, 1963. xii,472p, illus. 60s.
B Deals with the biology, technology, and industry of horticulture. Designed primarily as a university-level textbook.
- ROSE, G. J.** 419
 Crop protection: with contributions by T. W. Barker, D. Boocock, C. P. Hampson, I. Greenfield. 2nd rev. ed. Leonard Hill, 1963. xvi,490p, plates, tables, diagrs, refs. 4 gns.
B Coverage in an expanded edition of the considerable developments in this field since publication of first ed. 1955. Useful appendixes on spraying rates and effectiveness on weed control.

- ZEUNER, F. E. 420
A history of domesticated animals. Hutchinson, 1963. 560p, illus, tables, diagsr, bibliog. 4 gns.
A First substantial work on this subject to be published in English. General section on early domestication precedes chapters devoted to individual species.

66 Chemical Technology

- HARWOOD, J. H. 421
Industrial applications of the organometallic compounds: a literature survey. C & H, 1963. xi,451p, tables, refs. 60s.
D Summary of periodical literature and patent information is presented, intended as a means by which the reader can assess the 'state of the art' of organometallic compounds.

67/68 Manufactures

- KLUCKOW, P. 422
Rubber and plastics testing, tr. by D. Kerry, with additional sections by J. A. Brydson and K. J. Saunders. Ed. by G. N. Welding and M. A. Pysden. C & H, 1963. xiv,242p, illus, tables, diagsr, refs. 60s.
B Useful elementary, though expensive, treatment, more concerned with the testing of rubbers than plastics.
MOILLIET, J. L. ed. 423
Waterproofing and water-repellency. Amsterdam, Elsevier, 1963. 502p, illus. 100s.
C Authoritative, well presented surveys covering chemistry of waterproofing processes, methods of application to textiles, paper, building materials, and soils; testing and evaluation of proofed materials.

69 Building Industry

- ABRAHAM, H. 424
Asphalts and allied substances: their occurrence, modes of production, uses in the arts, and methods of testing; vol. 5, methods of testing: fabricated bituminous products. 6th ed. Princeton (NJ), London, [etc], Van Nostrand, 1963. xvii,432p, tables, diagsr, refs. 116s.
C Excellent reference book and advanced university textbook describing methods for testing and analysis of a range of bituminous mixtures including paving materials, enamels and pipe-sealing compositions, compounds for electrical purposes, roofing felts, and solvent compositions.
WILLIS, A. J. 425
Practice and procedure for the quantity surveyor. 3rd ed., rev. and enl. Crosby Lockwood, 1963. xii,249p, tables, bibliog. 25s.
C Revision of a standard work includes recent extensive changes in procedure and their effect on practice. Necessary reading for those in the later years of training.

7 THE ARTS

77 Photography

- BRAIN, E. B. and TEN CATE, A. R. 426
Techniques in photomicrography. Edinburgh, London, O & B, 1963. ix,147p, plates, tables. 30s.
B Book for the workbench consisting essentially of sets of working instructions for the practical photomicrographer.
NEBLETTE, C. B. 427
Photography: its materials and processes. 6th ed. Princeton (NJ), London, [etc], Van Nostrand, [1963]. viii,508p, illus, plates, tables, diagsr, refs. 116s.
B New edition of a standard work written by a team of twenty experts, has been brought up to date in all sections, and a new chapter on electrophotography has been added. Fifth edition published 1952.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

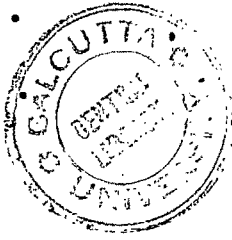
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Aslib Book List

A MONTHLY LIST OF RECOMMENDED
SCIENTIFIC AND TECHNICAL BOOKS

with annotations

VOLUME 28 NUMBER 8

August 1963

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ASLIB BOOK LIST

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NO. 8

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Preface

Aslib Book List is a monthly classified list of books on scientific and technical subjects. Its special value is that every book included has first been examined and recommended by a specialist in the subject treated. A short annotation is given to indicate the scope of the book and the reason for its recommendation where this appears to be helpful.

The list is intended primarily for the guidance of public, university, and special librarians:

- a* when called upon for material in fields that are not familiar to them;
- b* where they are unable to examine copies of new books before ordering;
- c* when more extensive reference tools are not available to them.

Entries are normally restricted to books in the English language and are arranged by the Universal Decimal Classification. The symbols *A*, *B*, *C*, and *D* are used to denote the standards or categories of books, as follows:

- A* books suitable for general readers; treating their subjects in an introductory, elementary, or general manner
- B* books of intermediate technical standard or students' textbooks
- C* books of an advanced or highly technical character
- D* directories, dictionaries, handbooks, lists and catalogues, encyclopedias, yearbooks, and similar publications.

Regular transactions of societies are not included, nor are British Standard Specifications (except bound volumes).

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Aslib Book List

VOLUME 28 . NUMBER 8 . AUGUST 1963

5 MATHEMATICS AND NATURAL SCIENCES

HOGG, Q. M., *2nd viscount Hailsham* 428
Science and politics. Faber, 1963. 110p. 13s 6d.

A Discussion of relations between science and government and the sponsoring of scientific research from public funds; a plea for the revision of scientific education and more widespread application of scientific techniques throughout industry.

51 Mathematics

ALLEN, R. G. D. 429
Mathematical analysis for economists. London, Macmillan; NY, St Martins P, 1962 [i.e. June 1963]. xvi, 548p, tables, diagrs. 20s. *Papermac* 34.

C Modern classic providing a rigorous course in mathematical analysis for advanced students of economics, the mathematics being developed along lines most relevant to economic theory. Latest of the many reprints of the original hardback edition published in 1938.

TENENBAUM, M. and POLLARD, H. 430
Ordinary differential equations: an elementary textbook for students of mathematics, engineering, and the sciences. NY, London, Harper & Row, ©1963. xvii, 808p, tables, diagrs, bibliog. 81s. *Harper's mathematics series*.

B Clear and comprehensive course, starting with fundamentals and extending to sections on numerical methods, the Laplace transform, and existence theorems, with an excellent collection of worked practical illustrations and many exercises.

52 Astronomy. Surveying. Geodesy

FEDEROV, Ye.P. 431
Nutation and forced motion of the earth's pole from the data of latitude observations, tr. from the Russian by B. S. Jeffreys. . . Oxford, NY, [etc], Pergamon P, 1963. xix, 152p, tables, refs. 50s.

C Mathematical investigation by a leading Russian authority of the discrepancies between modern theories of terrestrial rotation and the astronomical observations.

SOBOLEV, V. V. 432
A treatise on radiative transfer, tr. by S. I. Gaposchkin. Princeton (NJ), London, [etc], Van Nostrand, 1963. xi, 319p, tables, refs. 76s.

C Directed particularly to astrophysicists, but would serve as an excellent introduction for research workers in related fields. The author is an original researcher and an authority in the field.

53 Physics and Mechanics

BOLTAKS, B. I. 433
Diffusion in semiconductors, tr. by J. I. Carasso. Ed. by H. J. Goldsmid. Infosearch [distr. by Cleaver-Hume], ©1963. [12], 378p, tables, diagrs, refs. 3 gns.

C Unified treatment systemizing the experimental data on self- and impurity-diffusion that have accumulated in recent years up to 1960. For physicists and metallurgists.

GARBELL, M. A. 434
Theses of the first Soviet gravitation conference held in Moscow in the summer of 1961. San Francisco, Garbell Research Foundation [1714 Lake Street, San Francisco 21, California], ©1963. 130p, refs. \$7.79. *Garbell aerospace series*, no. 9.

C Subject synopses, abstracts, and translations of the theses of eighty-three papers giving a comprehensive picture of current Soviet research on gravitation. Coverage includes classical theory, non-Riemannian generalization of geometry, quantum theory, cosmology, and gravimetry.

- HARRIS, C. O. 435
Strength of materials. London, Technical P; [Chicago, American Technical Society], 1963. [6], 212p, diags. 58s.
B Simplified discussion of strength of materials at intermediate level intended for the student of mechanical and civil engineering.
- KRON, G. 436
Diakoptics: the piecewise solution of large-scale systems. Reprinted from the *Electrical Journal* with a new preface by the author. Macdonald, 1963. xvii, 166p, tables, diags, refs. 50s.
C Novel method for the numerical solution of large physical systems using topological graphs, tensors, and matrix methods. The justification offered is of a numerical rather than a mathematical nature.
- LOTHIAN, G. F. 437
Electrons in atoms. Butterworths, 1963. x, 196p, illus, tables, diags, refs. 35s.
B Introduction from first principles of some fundamental concepts of quantum theory; the scope of the book is unusual in this respect but valuable, particularly to first-year physics degree students.
- MARIOT, L. 438
Group theory and solid state physics, tr. by A. Nussbaum. London, Prentice-Hall International, [1963]. x, 114p, tables, bibliog. 1 gn.
C Translation of *Groupes finis de symétrie et recherche de solutions de l'équation de Schroedinger*, 1959. Mathematical study of crystal structure, discussing group definitions, finite groups, space groups and crystals, Ritz's variational method, trial functions, plane waves, and energy levels in diamond-type crystal. For mathematical physicists and crystallographers.
- ROSENHEAD, L. ed. 439
Laminar boundary layers: an account of the development, structure and stability of laminar boundary layers in incompressible fluids, together with a description of the associated experimental techniques. OUP, 1963. xxi, 688p, plates, tables, diags, refs. 90s. *Fluid motion memoirs*.
B-C Comprehensive textbook written by a number of experts, with much new and important material on laminar boundary layers in incompressible flow and the associated experimental techniques.
- SLICHTER, C. P. 440
Principles of magnetic resonance, with examples from solid state physics. NY, London, Harper & Row, ©1963. ix, 246p, tables, diags, bibliog. 62s. *Harper's physics series*.
B Mathematical study of nuclear and electron m.r. giving basic ideas and theoretical methods necessary in research employing resonance. Examples and problems. For graduate students, physicists, and chemists.
- SQUIRES, T. L. 441
Introduction to microwave spectroscopy. Newnes, 1963. 140p, illus, diags. 30s.
B Popular treatment of electron spin resonance spectrometers from the point of view of the physicist; of background interest to chemists using this technique.
- 54 Chemistry** 442
ADVANCES in physical organic chemistry, ed. by V. Gold; vol. 1. NY, London, Academic P, 1963. xv, 443p, tables, diags, refs. 90s.
C Highly authoritative articles on mechanisms of reactions in solution, quantitative treatment of directive effects in aromatic substitution, hydrogen exchange in liquid ammonia, planar and non-planar aromatic systems, identification of free radicals by ESR, and structure of free radicals. For final-year degree students, research workers, and lecturers.
- BOWEN, H. J. M. and GIBBONS, D. 443
Radioactivation analysis. OUP, 1963. [6], 295p, plates, tables, diags, bibliog. 50s.
B-C Authoritative textbook for users of this sensitive technique, dealing primarily with equipment and experimental detail of those applications for which it is particularly suitable.

- CRITCHFIELD, F. E. 444
Organic functional group analysis. Oxford, NY, [etc], Pergamon P, 1963. vii,187p, tables, diagrs, refs. 2 gns. *International series of monographs on analytical chemistry*, vol. 8.
E Practical collection of chemical methods for determining the more common functional groups, with the principles, procedure, scope, and limitations of each method clearly given.
- EBSWORTH, E. A. V. 445
Volatile silicon compounds. Oxford, NY, [etc], Pergamon P, 1963. v,179p, tables, refs. 2 gns. *International series of monographs on inorganic chemistry*, vol. 4.
B Describes for final-year and postgraduate students the chemistry and structures of inorganic and organic compounds of silicon, summarizing existing knowledge and dealing in detail with new material.
- FIESER, L. F. and FIESER, M. 446
Topics in organic chemistry. NY, Reinhold; London, C & H, 1963. xii,668p, diagrs, refs. 80s.
B-C Essentially a supplement of the authors' *Advanced organic chemistry*, 1961, presenting topics not adequately included in the earlier work; heterocyclic compounds, terpenes, steroids, polymers, chemotherapy, and dyes. Selected topics in which there has been important progress form a large section.
- HERINGTON, E. F. G. 447
Zone melting of organic compounds. Oxford, Blackwell Scientific Publications, 1963. viii,162p, tables, diagrs, refs. 35s.
B Authoritative, lucid account presenting the history, theory, experimental technique, and application in purification and study of phase equilibria. Some related techniques are also discussed.
- INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY and THE SWEDISH CHEMICAL SOCIETY 448
Coordination chemistry: plenary lectures presented at the seventh international conference on coordination chemistry held in Stockholm and Uppsala, Sweden, 25-29 June, 1962. Butterworths, 1963. [6],123p, tables, diagrs, refs. 30s.
C Seven lectures, each a review of important recent work on metal complexes, with emphasis on physical methods. Valuable for research and postgraduate chemists.
- KATRITZKY, A. R. ed. 449
Advances in heterocyclic chemistry; vol. 1. NY, London, Academic P, 1963. xi,476p, tables, diagrs, refs. 107s 6d.
C Seven articles, documented to end of 1961, on chemistry of theophenes, heterocyclic pseudo bases, quinazolines, prototropy of heteroaromatic compounds, aza analogues of pyrimidine and purine bases, and reactions of acetylenecarboxylic acids with N-heterocyclic compounds.
- KATRITZKY, A. R. ed. 450
Physical methods in heterocyclic chemistry; vol. 1, [nonspectroscopic methods]. NY, London, Academic P, 1963. xi,346p, tables, diagrs, bibliog. 86s.
C Six authorities from several countries discuss various physical methods and the interpretation of results obtained by these, especially in regard to heterocyclic compounds. Results are quoted extensively and the literature is presented in numerous references to the end of 1961. Subjects include ionization constants, heteroaromatic reactivity, X-ray diffraction studies, solubility, dipole moments, and electrochemical properties.
- KATRITZKY, A. R. ed. 451
Physical methods in heterocyclic chemistry; vol. II, [spectroscopic methods]. NY, London, Academic P, 1963. xi,398p, tables, diagrs, bibliog. 100s.
C Articles deal with electronic absorption spectra, nuclear quadrupole resonance, nuclear magnetic resonance spectra, and infra-red spectra.

- LICK, W. J. and EMMONS, H. W. 452
Thermodynamic properties of helium to 50,000 K. Cambridge (Mass), Harvard UP, 1962; [London, OUP, 1963] v, 122p, tables, diagrs, refs. 2 charts. 24s.
C Contains tables for use in various aspects of fundamental research, of calculated values for thermodynamic properties of helium at temperatures between 8,000° and 49,800° K and pressures of 10^{-4} to 10^8 atmospheres.
- MCLAFFERTY, F. W. 453
Mass spectral correlations. Washington (DC), American Chemical Society, 1963. v, 117p, tables, bibliog. \$4.75. *Advances in chemistry series, no. 40*.
C Classifies, with data from over 4,000 compounds, the formulae of ions found at particular mass spectrum values, and gives an assessment of the probability of each classification, and an indication of the original organic molecule.
- MOELLER, T. 454
Chemistry of the lanthanides. NY, Reinhold; London, C & H, 1963. ix, 117p, tables, diagrs, refs. 16s. *Selected topics in modern chemistry*.
B Students will find this a stimulating account of the lanthanide elements based on the electronic configurations and oxidation states; an outline of the position of the actinides is included.
- PROGRESS in the chemistry of fats and other lipids; vol. 6, ed. by R. T. Holman, W. O. Lundberg, and T. Malkin. Oxford, NY, [etc], Pergamon P, 1963. xiii, 364p, plates, tables, diagrs, refs. 100s.
C Ten review articles by international authorities range from plasmalogens, phospholipid synthesis, fatty acid oxidation and biosynthesis, to a number of medical and nutritional topics, and one on the distribution of vegetable oil glycerides.
- REESE, E. T. ed. 456
Advances in enzymic hydrolysis of cellulose and related materials, including a bibliography for the years 1950–1961: proceedings of a symposium sponsored by the American Chemical Society and co-sponsored by the Army Research Office, March 1962. Oxford, NY, [etc], Pergamon P, 1963. xii, 290p, tables, diagrs, bibliog. 80s.
C Thirteen papers by international authors deal with different fundamental—especially chemical and biochemical—and applied aspects of interest to specialists in the narrower subject and in carbohydrate and enzyme chemistry. Four hundred references, no index.
- TECHNIQUES of polymer science: comprising papers (with discussions) read at a symposium organized by the Plastics and Polymer Group held on 27–28 September, 1962, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2. Society of Chemical Industry, 1963. 319p, tables, diagrs, refs. 60s. *SCI monograph no. 17*.
C Collection of twenty papers written by experts for experts, dealing with most of the current problems in the techniques of this discipline.
- 55 Geology. Meteorology**
- INTERNATIONAL ASTRONOMICAL UNION 458
Symposium no. 18 held in Paris, 25th–29th June 1962, jointly with the International Union of Geodesy and Geophysics: theoretical interpretation of upper atmosphere emissions, ed. by D. R. Bates. Oxford, NY, [etc], Pergamon P, 1963. 264p, plates, tables, diagrs, refs. 70s. Paperback.
C Valuable, well documented, and authoritative collection of papers describing recent research in the field, with special reference to the aurora.
- WEXLER, H. and CASKEY, J. E. eds 459
Proceedings of the first international symposium on rocket and satellite meteorology, Washington DC, April 23–25, 1962. Amsterdam, North-Holland Publ. Co., 1963. ix, 440p, illus, refs. 100s.
C Thirty-eight papers or abstracts grouped into four parts: meteorological rockets, meteorological satellites—radiation studies, meteorological satellites—cloud studies, meteorological satellites—special studies, all aimed at the discussion of the results of these new observing techniques and their implications for the solution of many important problems of the atmosphere.

56 Palaeontology

POKORNY, V.

460

Principles of zoological micropalaeontology; vol. 1, tr. by K. A. Allen and ed. by J. W. Neale. Tr. from the German ed. *Grundzüge der Zoologischen Mikropaläontologie, Bd. 1*, . . . 1958. Oxford, NY, [etc], Pergamon P, 1963. xiv, 652p, illus, tables, diagrs, bibliog. 4 gns. *International series of monographs on earth science, vol. X*.

B Textbook and manual for practising micropalaeontologists. Includes chapters on the history of the subject, collection and preparation of microfossils, and on microstratigraphical methods. Index of fossils.

57 Anthropological and Biological SciencesHARRIS, R. J. C. *ed.*

461

Biological organization at the cellular and supercellular level: a symposium held at Varenna, 24-27 September, 1962 under the auspices of Unesco. NY, London, Academic P, 1963. x, 261p, illus, tables, diagrs, refs. 60s.

C Series of fourteen specialized papers by embryologists, zoologists, biochemists, and geneticists dealing with recent advances in experimental morphology; the link between molecular organization and visible structures is still very mysterious.

JELLINCK, P. H.

462

Biochemistry: an introduction. NY, London, [etc], Holt, Rinehart and Winston, ©1963. viii, 308p, illus, tables, diagrs, bibliog. 48s.

B Well written exposition of the present position more suitable for the general reader with some knowledge of chemistry than for students since there is little emphasis on the fundamental features. Very well produced.

463

METHODS of biochemical analysis; vol. XI, ed. by D. Glick. NY, London, Interscience, ©1963. ix, 442p, illus, tables, diagrs, refs. 110s.

C Articles by British and American authorities dealing with the application of various methods mainly based on modern instrumental techniques to a wide range of biochemical applications.

VAN NORMAN, R. W.

464

Experimental biology. London, Prentice-Hall International, ©1963. xi, 243p, illus, tables, diagrs, refs. 2 gns.

B Introduction to the theoretical and technical sides of experimental biology. Chapters also on biological literature and preparation of manuscripts for publication. For undergraduates.

58 BotanyTURRILL, W. B. *ed.*

465

Vistas in botany; vol. II, applied botany. Oxford, NY, [etc], Pergamon P, 1963. xiii, 380p, illus, plates, tables, diagrs, refs. 100s.

B Ten articles by scientists eminent in their fields describing recent applications of botanical study to the advance of agriculture, horticulture, and industry.

59 ZoologyCUTHBERTSON, D. P. *ed.*

466

Progress in nutrition and allied sciences: being a contribution marking the first fifty years of the Rowett Research Institute. Edinburgh, London, O & B, 1963. xvii, 452p, plates, tables, diagrs, refs. 50s.

C Series of essays by members and ex-members of the Institute covering progress of research in animal nutrition.

LOPASHOV, G. V.

467

Developmental mechanisms of vertebrate eye rudiments, tr. by J. Medawar. Oxford, NY, [etc], Pergamon P, 1963. xi, 225p, illus, tables, diagrs, refs. 70s.

C Valuable translation of an account of experimental work on the embryonic vertebrate eye, originally published in Russian in 1960, should help readers of English to a fuller appreciation of modern Soviet trends in embryology.

6 APPLIED SCIENCES**61 Health and Safety**HARRIS, R. J. C. *ed.*

468

Cellular basis and aetiology of late somatic effects of ionizing radiation: a symposium held in London 27-30 March 1962 under the auspices of Unesco and IAEA. NY, London, Academic P, 1963. xii,359p, plates, tables, diags, refs. 80s.

C Series of illuminating papers and discussions on six main topics, with emphasis on leukaemogenesis, carcinogenesis, and life-shortening following irradiation.

62 Engineering and Technology

469

ADVANCES in materials research in the NATO nations: the proceedings of a NATO symposium organized by the Structures and Materials Panel of Agard upon the request of the Science Advisor to NATO. . . . Oxford, NY, [etc], Pergamon P, for the Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization, 1963. x,549p, illus, tables, diags, refs. 100s. *Agardograph* 62.

C Landmark in materials research dealing with three main topics: the results of fundamental research, its rôle in development, the organization of materials research in six NATO countries.

BARROIS, W. and RIPLEY, E. L. *eds*

470

Fatigue of aircraft structures: proceedings of the symposium held in Paris, 16-18 May 1961. Oxford, NY, [etc], Pergamon P, 1963. xi,362p, illus, tables, diags, refs. 100s. *International series of monographs in aeronautics and astronautics: division IX*, vol. 12.

B-C Sixteen papers, three of which are concerned with new basic phenomena. Useful state-of-the-art summary of the subject for students, practising engineers, and research workers.

HUME, K. J.

471

Engineering metrology. 2nd ed. Macdonald, 1963. 358p, plates, tables, diags, bibliog. 35s.

B Useful reference book for those in industry who are concerned with precise measurement during production or inspection. It is also a valuable textbook on the subject.

621.039 NUCLEAR ENGINEERING

BROWN, B.

472

Experimental nucleonics. London, Iliffe Books; Englewood Cliffs (NJ), Prentice-Hall, 1963. 245p, plates, tables, diags, refs. 2 gns. *Nuclear reactor technology series*.

B Useful introductory textbook suitable for courses such as those in nuclear engineering at colleges of advanced technology. Part 1 deals with the theoretical background to the fifty experiments described in Part 2.

621.3 Electrical Engineering

BENSON, F. A.

473

Problems in electronics. 3rd ed., rev. and enl. Spon, 1963. xix,265p, diags, refs. 2 gns.

B Comprehensive collection of problems and their solutions has been brought up to date to cover the trend of using transistors in place of valves, while still maintaining its usefulness to students as a teach-yourself book and an aid to revision.

ELECTRONIC ENGINEERING ASSOCIATION

474

Printed wiring and printed circuit techniques. Iliffe Books for the Association, 1963. 49p, tables. 5s.

B Summary of recommended materials and techniques for use in the design and manufacture of printed circuits.

HAWKER, J. P. and REDDIHOUGH, J. A. *eds*

475

Electronics pocket book. Newnes, 1963. vii,288p, tables, diags. 1 gn.

A-B Inexpensive, concise description of subjects which will serve students as an introduction to electronics and as an easily available reference book.

- SLATER, L. E. *ed.* 476
 Bio-telemetry: the use of telemetry in animal behaviour and physiology in relation to ecological problems. Proceedings of the interdisciplinary conference, New York, March 1962. Oxford, NY, [etc], Pergamon P, 1963. xii, 372p, illus, tables, diagrs, refs. 6 *gns.*
 C Lively report of a conference attended by biologists, engineers, and psychiatrists, for the discussion, technical for the most part, of the use of modern electronic methods in studying the physiology and behaviour of animals and men.
- TITARENKO, M. and NOSKOV-DUKELSKY, I. 477
 Protective relaying in electric power systems. Moscow, Foreign Languages Publishing House; [London, Central Books], 1963. 367p, tables, diagrs. 15s.
 C Full account of Russian practice in the protection of power lines, generators, motors, transformers, and busbars. No index. For students and power systems protection engineers.
- WILLIAMS, G. E. and PRIGMORE, B. J. 478
 Electrical engineering: a survey of principles and applications. Heinemann Educational Books, 1963. xiv, 864p, diagrs, bibliog. 70s.
 B Very comprehensive college text covering circuit fundamentals, power engineering, and electronics. For students taking Parts I and II, IEE examination, and Parts I and II, London B.Sc.(Eng.). Problems and answers.
- YOUNG, R. E. 479
 Telemetry. Temple P, 1963. vii, 78p, tables, diagrs, bibliog. 17s 6d. *Temple Press monographs on rockets and missiles.*
 B Covers applications of transducers, radio frequency techniques, demultiplexing, and data recording to missile instrumentation and telemetry showing both British and American methods.

624 Structural Engineering

- BENSON, C. S. 480
 Structural design and practice. Batsford, 1963. x, 273, [5]p, tables, diagrs. 3 *gns.*
 B Twelve fully worked design examples and other examples on specification and on quantities. Suitable for students preparing for Section B of the Associate Membership Examination of the Institution of Structural Engineers.

629.19 ASTRONAUTICS

- ADVANCES in the astronautical sciences; vol. 8, proceedings of the seventh annual meeting of the American Astronautical Society, Dallas, Texas, January 16-18, 1961. NY, Plenum P, for the Society, ©1963. xii, 589p, illus, tables, diagrs, refs, bibliog. \$19.50. 481
 C Fifty-eight original papers (of which fourteen appear as abstracts only) on various aspects of space research including communication and guidance, astrophysics, cosmology, re-entry problems, biological aspects, and lunar exploration.
- NELSON, W. C. and LOFT, E. E. 482
 Space mechanics. London, Prentice-Hall International, [1963]. x, 245p, illus, tables, diagrs, refs. 50s. *Prentice-Hall international series in space technology.*
 B Introduction to the mathematics, mechanics, and astrodynamics of space flight, suitable for university students of engineering.

63 Agriculture. Forestry. Livestock. Fisheries

- BEWLEY, W. F. 483
 Commercial glasshouse crops. Rev. ed. Country Life, 1963. xii, 13-523p, plates, tables, diagrs, refs. 4 *gns.*
 B Comprehensive work dealing with the history and practical cultivation of all the plants and fruits grown commercially under glass in the British Isles.
- HART, C. E. 484
 Practical forestry for the agent and surveyor. Estates Gazette, 1963. xxvii, 438p, plates, tables, diagrs, bibliog. 3 *gns.*
 B Comprehensive review of current British forestry practice, designed to meet the needs of landowners, estate agents, and foresters.

- KIRBY, R. H. 485
Vegetable fibres: botany, cultivation and utilization. London, Leonard Hill; NY, Interscience, 1963. xvi,464p, plates, tables, bibliog. 4 gns. *World crops books*.

C Well written and much needed reference book on commercial vegetable fibres and their production (except cotton), the author being an acknowledged authority on the subject.

- LAWRENCE, W. J. C. 486
Science and the glasshouse. 3rd ed. Edinburgh, London, O & B, 1963. xvi,183p, plates, tables, diagrs, bibliog. 25s.

A-B Explains how the results of the outstanding experimental work on composts and on the design and construction of glasshouses, undertaken at the John Innes Institute, can be applied in horticultural practice.

- MCILROY, R. J. 487
Introduction to tropical cash crops. [Ibadan], Ibadan UP, 1963. xi,163p, plates, refs. 25s. Paperback.

B Excellent introductory textbook for students of tropical agriculture and economic botany. As indicated by the title, purely food crops such as yams and sweet potatoes, and fodder crops are excluded.

66 Chemical Technology

- GILCHRIST, J. D. 488
Fuels and refractories. Oxford, NY, [etc], Pergamon P, 1963. x,158p, tables, diagrs, bibliog. 15s. *Commonwealth and international library of science, technology, engineering and liberal studies, no. 131: fuel and oil technology division, vol. 1*.

A Simple introductory monograph dealing with the economics of choice of refractory in terms of the properties of fuel used and the properties of the refractory.

- JAMRACK, W. D. 489
Rare metal extraction by chemical engineering techniques. Oxford, NY, [etc], Pergamon P, 1963. xi,360p, plates, tables, diagrs, refs. 70s. *International series of monographs on chemical engineering, vol. 2*.

C Most valuable work in which the subject matter is considered on the basis of the typical unit processes involved. Strongly recommended to metallurgists and chemists concerned with the extraction of rare metals and as a reference book for the student.

69 Building Industry

- BARTON, J. J. 490
Electric space heating: design and practice. Newnes, 1963. vii,199p, tables, diagrs. 50s.

B Guide to the selection of systems and the design of direct, electric circulator, single dropping pipe, two-pipe gravity, forced, and accelerated systems.

- DUBIN, M. D. 491
Architectural supervision of modern buildings: NY, Reinhold; London, C & H, 1963. viii,304p. 80s.

B Guide to the management of building contracts including the supervision of the work in each trade.

- GREAT BRITAIN. Ministry of Public Building and Works 492
Production of building components in shipyards. HMSO, 1963. 20p. 1s 3d.

A Report of an inquiry into the feasibility of devoting spare capacity in shipyards to the manufacture of building components.

- WEST, H. W. H. 493
Layout of brickworks. Brick Development Association, 1963. 91p, illus. 15s 6d.

B Second volume in a series of monographs dealing with the main aspects of the production of bricks; deals with the layouts of works for producing bricks by the various methods. Recommended to those in the industry and to students.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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with annotations

VOLUME 28 NUMBER 9

September 1963

Entries 494-557



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ASLIB BOOK LIST VOL. 28 NO. 9 SEPTEMBER 1963

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VOLUME 28 . NUMBER 9 . SEPTEMBER 1963

4 PHILOLOGY

- KRAMER, A. A. 494
Russian-English chemical reader. Princeton (NJ), London, [etc], Van Nostrand, ©1963. vii,311p, tables, bibliog. 58s 6d.
C Valuable aid to chemists desiring to study Russian chemical literature, contains Russian passages (English translation on facing page) on general, inorganic, organic, and nuclear reactor chemistry, and a short Russian-English dictionary.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- LOÈVE, M. 495
Probability theory. 3rd ed. Princeton (NJ), London, [etc], Van Nostrand, 1963. xvi, 685p, bibliog. 115s.
C New edition of a well-known advanced work on the mathematics of modern probability theory, suitable for reference and as a textbook for postgraduate study.
- WHITTLE, P. 496
Prediction and regulation by linear least-square methods. EUP, 1963. x,147p, refs. 25s. *Applied mathematics series*.
C Advanced but unified treatment of some topics concerning the statistical analysis of observations in the form of a time series with special reference to the regulation of social, economic, and industrial processes.

53 Physics and Mechanics

- BATCHELOR, G. K. *ed.* 497
Scientific papers of Sir Geoffrey Ingram Taylor . . . ; vol. III, aerodynamics and the mechanics of projectiles and explosions. CUP, 1963. xii,559p, plates, tables, diags, refs. 100s.
C Third of projected four volume series, amply illustrating the extraordinary breadth of interest, the beautiful simplicity of technique, and masterly physical insight of this great scientist.
- CRANSHAW, T. E. 498
Cosmic rays. OUP, 1963. [10],126p, tables, diags, refs. 18s. *Oxford library of the physical sciences*.
C Brief, detailed survey of experiment and theory concerning the nature and origin of cosmic ray primaries, high energy nuclear collisions in the atmosphere, extensive air showers, geo-magnetic effects and temporal variations in cosmic rays. Mainly for physicists.
- DOREMAN, L. A. 499
Hydrodynamic resistance and the heat loss of rotating solids, tr. by N. Kemmer. Edinburgh, London, O & B, 1963. ix,244p, tables, diags, refs. 3 gns.
C Fluid flow and heat transfer due to disks and cylinders rotating in free space and in housings are discussed, with an account of rotating bodies in axial streams. Fills a gap in the literature but value diminished by patchy cognizance of recent related research.
- GRIEG, D. M. *and* WISE, T. H. 500
Hydrodynamics and vector field theory; vol. 2, examples in special methods. EUP, 1963. ix,166p, diags. 1 gn. *Applied mathematics series*.
B Provides worked and to-be-solved problems in two and three dimensions, in hydrodynamics, electrostatics, magnetostatics, current flow, and electromagnetism. All problems taken from university degree papers. For students of mathematics, science, and engineering.

501

MAGNETIC materials digest 1961: sponsored by the 1962 conference on magnetism and magnetic materials. Conference sponsors: American Institute of Electrical Engineers [and] American Institute of Physics. Editor: W. Palmer. NY, American Institute of Physics, 1962; [Oxford, NY, [etc], Pergamon P, 1963]. ix, 290p, refs. 35s.

C Brief informative annotations for research scientists of over 1,300 papers on theoretical and practical aspects of the properties of matter associated with ordered spin configurations.

TROUP, G.

502

Masers and lasers: molecular amplification and oscillation by stimulated emission. London, Methuen; NY, Wiley, 1963. viii, 192p, diags, refs. 18s. *Methuen's monographs on physical subjects.*

B Clear account of stimulated emission and its microwave applications; includes a brief reference to more recent optical developments. Excellent introduction to maser physics for the second-year university student.

539.1 Nuclear Physics

BURCHAM, W. E.

503

Nuclear physics: an introduction. Longmans, 1963. xiv, 739p, tables, diags, refs. 70s.

B Up-to-date textbook for final-year honours physics students, describing facts and theories of nuclear properties, reactions, and structure from an experimental standpoint. High-energy physics is excluded.

ZYRYANOVA, L. N.

504

Once-forbidden beta-transitions, tr. from the Russian by P. Basu. Translation edited by R. W. Clarke. Oxford, NY, [etc], Pergamon P, 1963. xvi, 107p, tables, bibliog. 35s.

C Originally published in Moscow, 1960. In three sections: electron and positron decay; capture of orbital electrons; experimental results. For nuclear spectroscopists.

55 Geology. Meteorology

GREAT BRITAIN. Meteorological Office

505

Marine observer's handbook. 8th ed. HMSO, 1963. vii, 148p, plates, tables, diags. 1 gn.

B Written almost exclusively for ocean-going seamen to assist them in the full and accurate compilation of the ship's meteorological log. High atmosphere and astronomical phenomena are dealt with, in addition to the normal meteorological observations taken at sea.

LYNCH, E. J.

506

Formation evaluation. NY, London, Harper & Row, ©1962 [i.e. July 1963]. xv, 422p, illus, tables, diags, refs. 94s. *Harper's geoscience series.*

B Detailed treatise on methods and tools used in locating oil-bearing formations and evaluating their commercial significance. Of value to both the student and the petroleum engineer.

507

OCEANOGRAPHY and marine biology: an annual review; vol. 1, ed. by H. Barnes. A & U, 1963. 478p, tables, diags, refs. 75s.

C First of a series of progress reports on basic aspects of oceanography and marine biology, dealing with tides, sea level, chemistry, shelf geology, environmental and regional studies, and biology of some plankton species.

TERMIER, H. and TERMIER, G.

508

Erosion and sedimentation, tr. by D. W. and E. E. Humphries. Princeton (NJ), London, [etc], Van Nostrand, ©1963. xii, 433p, illus, diags, bibliog. 70s.

B Any serious student of geology or geomorphology will find this clear, well illustrated account of the factors controlling the progressive natural evolution of the earth's surface intensely interesting and valuable.

57 Anthropological and Biological Sciences

509

ADVANCES in marine biology; vol. 1, ed. by F. S. Russell. London, NY, Academic P, 1963. xiii,410p, illus, tables, diagrs, refs. 4 gns.

- C Synoptic reviews written by specialists, of recent research into the rearing of bivalve molluscs, breeding of the North Atlantic eels, photoreception and vision in fishes, the biology of coral reefs, and the behaviour and physiology of clupeid fishes. Valuable addition to the current literature.

TAYLOR, A. E. R. *ed.*

510

Techniques in parasitology: first symposium of the British Society for Parasitology. Oxford, Blackwell Scientific Publications, 1963. viii,107p, plates, tables, bibliog. 15s. Paperback.

- C Four papers of importance and value to both trainee and practising parasitologists interested in the application of biochemical, radioisotope, serological, electron microscope, and culture techniques.

ZENKEVITCH, L.

511

Biology of the seas of the U.S.S.R., tr. by S. Botcharskaya. A & U, 1963. 955p, illus, tables, diagrs, maps, bibliog. 160s.

- C All marine biologists will wish to refer to this valuable work, a considerably amended and supplemented version of *Fauna and biological productivity of the sea*, 2nd ed. 1947. The fruits of much original work by the distinguished author are included.

577.1 Biochemistry

BCRASKY, R. *ed.*

512

Ultrastructure of protein fibers: papers presented at a symposium of the nineteenth annual meeting of the Electron Microscope Society of America . . . , Pittsburgh, Pennsylvania, on August 21, 1961. NY, London, Academic P, 1963. xvii,185p, illus, tables, refs. 72s.

- C Well illustrated volume containing six contributions covering the physical, chemical, and mechanical properties of protein fibres, and the ultrastructure and arrangement of collagen, keratins, and protein systems in muscle.

EASTOE, J. E. *and* COURTS, A.

513

Practical analytical methods for connective tissue proteins. Spon, 1963. xiv, 145p, tables, diagrs, refs. 2 gns.

- C Well organized laboratory manual for research workers and lecturers in the fields of biological chemistry requiring full, practical details in convenient form, of analytical methods used in the study of connective tissue fibrous proteins.

58 Botany

LANGE, M. *and* HORA, F. B.

514

Collins guide to mushrooms and toadstools: with 96 colour plates from *Flora agaricina danica* by J. E. Lange. . . . Collins, 1963. 257p, illus, bibliog. 30s.

- A Excellent handbook from which any intelligent observer will be able to identify quickly, by use of the ingenious keys and splendid illustrations, a wide range of the larger fungi occurring in this country.

STACE, C. A.

515

Guide to subcellular botany: an introduction to the structure and functions of plant cells in the light of modern developments. Ed. by A. C. Shaw. Longmans, 1963. xi,148p, diagrs, refs. 15s.

- B Good account for sixth-formers and first-year undergraduates of recent research on the chemistry of plant compounds, on the submicroscopic structure of plant cells, and on genes, enzymes, and viruses.

59 Zoology

CLEMENTS, A. N.

516

Physiology of mosquitoes. Oxford, NY, [etc], Pergamon P, 1963. ix,393p, tables, plates, diagrs, refs. 80s. *International series of monographs on pure and applied biology: zoology, vol. 17.*

- C Valuable, well illustrated review for the specialist of the anatomy (including some recent work on ultrastructure), behaviour, embryology, and physiology of larval and adult mosquitoes. Eight hundred references and an appendix on systematics. Should be standard work for some time to come.

- DALES, R. P. 517
 Annelids. Hutchinson, 1963. 200p, illus, refs. 15s. *Hutchinson university library: biological sciences.*
B-C Highly successful and welcome specialized account of annelid biology—polychaetes, oligochaetes (earthworms), and leeches—with particular emphasis on their physiology and functional morphology.
- IVANOV, A. V. 518
 Pogonophora. Tr. from the Russian and ed. by D. B. Carlisle, with additional material by E. C. Southward. London, Academic P, 1963. xvi, 479p, illus, tables, refs. 90s.
B-C Excellent, well illustrated account of the anatomy, distribution, and systematics of the marine Pogonophora, containing much recent information not available when the original monograph was published. It will be a standard work of reference for zoologists and marine biologists.
- MELLANBY, H. 519
 Animal life in fresh water: a guide to fresh-water invertebrates. 6th ed. Methuen, 1963. viii, 308p, illus, refs. 25s.
A-B New edition of this well known, compact, and reasonably well illustrated book will be of great use and a stimulus to beginners in their studies of British fresh-water invertebrates.
- NIKOLSKY, G. V. 520
 Ecology of fishes, tr. from the Russian by L. Birkett. NY, London, Academic P, 1963. xv, 352p, tables, diagrs, bibliog. 75s.
B-C Valuable book for the ichthyologist and oceanographer who wish to have an account of Russian work on the inter-relations between fish and their environment, and the fundamental links in the life cycles of fishes.

6 APPLIED SCIENCES

- 621 Mechanical and Electrical Engineering** 521
 ADVANCES in cryogenic engineering; vol. 8, proceedings of the 1962 cryogenic engineering conference, University of California, Los Angeles, California, August 14–16, 1962. Ed. by K. D. Timmerhaus. NY, Plenum P, 1963. ix, 701p, illus, tables, diagrs, refs. \$17.50. *Cryogenic engineering conference publications.*
C This collection of eighty-two selected conference papers claims to be the most extensive yet. The range of subject matter is indeed comprehensive including He³ cryostats, phase-equilibria, thermodynamic diagrams, insulation, and mechanical testing.
- LONG, R. R. 522
 Engineering science mechanics. Englewood Cliffs (NJ), Prentice-Hall, 1963. 433p, diagrs. 78s. *Prentice-Hall series in engineering of the physical sciences.*
C Modern scientific approach to fundamentals in engineering mechanics with a complete discussion on the special theory of relativity and dimensional analysis. For advanced undergraduate and first-year graduate courses.
- TWEEDDALE, J. G. 523
 Practical mechanical design: an introduction for students. Iliffe Books, 1963. [8], 183p, tables, diagrs. 32s 6d.
B Deals comprehensively with the fundamentals of mechanical design, explaining theory and techniques in a clear manner, with numerous worked examples and line diagrams. For students, draughtsmen, and practising engineers.

621.039 NUCLEAR ENGINEERING

- HARRER, J. M. 524
 Nuclear reactor control engineering. Princeton (NJ), London, [etc], Van Nostrand, ©1963. xv, 587p, illus, tables, diagrs, bibliog. 128s.
C Intended as a compilation of 'know-how' for control engineers by the senior electrical engineers in the Reactor Engineering Division of Argonne National Laboratory, USA. Emphasis on examples of boiling water reactor control.

- HOGERTON, J. F. *ed.* 525
 • Atomic energy deskbook. NY, Reinhold; London, C & H, 1963. xiii, 673p, tables, diags, bibliog. 88s.
 • D Prepared under the auspices of US Atomic Energy Commission. An encyclopaedic dictionary with over 1,000 entries arranged alphabetically. Recommended for reference libraries.

621.3 Electrical Engineering

- BOULDING, R. S. H. 526
 Principles and practice of radar. 7th ed. Newnes, 1963. viii, 851p, tables, diags. 80s.
 B Revised edition, extensively rewritten and enlarged to include recent developments, particularly chapters on shipborne radar and aids to air navigation. Comprehensive reference book for radar operators and technicians; standard text for students.
- CARTER, H. and DONKER, M. 527
 Photo-electric devices in theory and practice. [Eindhoven], Philips Technical Library; [London, Cleaver-Hume P], 1963. viii, 130p, illus, tables, diags. 25s.
 B Outline of theoretical principles and a detailed description of over thirty devices used in industry, illustrated with photographs and numerous diagrams for students, engineers, and technicians.
- CENTRAL ELECTRICITY GENERATING BOARD 528
 Modern power station practice: a revised version in five volumes of a correspondence tuition course prepared by the . . . Board; vol. 1. The Board, 1963. [14], 196p, tables, diags, bibliog. 60s.
 B Serviceable book to intermediate standard, serving as an introduction to the four future volumes. Describes the civil engineering works and arrangement of main and electrical plant in power stations.
- CHANG, S. S. L. 529
 Energy conversion. Englewood Cliffs (NJ), Prentice-Hall, 1963. xi, 237p, diags, refs. 48s. *Prentice-Hall international series in electrical engineering*.
 C All forms of energy conversion except electromechanical are considered physically and mathematically to provide intending research engineers with suggestions for fruitful fields of research.
- DEARDS, S. R. *ed.* 530
 Recent developments in network theory: proceedings of the symposium held at the College of Aeronautics, Cranfield, September 1961, sponsored by the Department of Electrical and Control Engineering, the College . . . Oxford, NY, [etc], Pergamon P, 1963. xii, 250p, diags, refs. 4 gns. *International series of monographs in aeronautics and astronautics: division IX, symposia, vol. 13*.
 C Describes latest work on electrical network analysis and synthesis, dealing primarily with linear active and passive networks. Summarizes classical methods of non-linear networks and describes the search for a set of basic elements for their synthesis.
- INTERNATIONAL ELECTRONIC CIRCUIT PACKAGING SYMPOSIUM 531
 Advances in electronic circuit packaging; vol. 3, proceedings of the third . . . symposium sponsored by the University of Colorado, EDN (*Electrical Design News*), and *Design News*, held at Boulder, Colorado, August 15-17, 1962. Ed. by L. L. Rosine. NY, Plenum P, 1963. 457p, illus, tables, diags, refs. \$16.50.
 C Valuable collection of papers reporting research in the growing field of circuit and module packaging. Topics include thin film techniques, interconnections between micro-circuits, methods of assembly and deposition in small packaged circuits.
- NEUBERT, H. K. P. 532
 Instrument transducers: an introduction to their performance and design. OUP, 1963. x, 390p, tables, diags, refs. 4 gns.
 C Valuable study of the physical bases of the mechanical and electrical properties of acceleration, pressure, strain and vibration transducers with analogue outputs, particularly those useful in aeronautics.

SIMS, G. D. and STEPHENSON, I. M.

533

Microwave tubes and semiconductor devices. London, Glasgow, Blackie, 1963. xxii, 388p, illus, tables, diagrs, refs. 75s.

B Survey of the principles of microwave amplifiers and oscillators including more recent developments such as parametric amplifiers and masers. Easily readable and a valuable book for advanced students.

534

TELEVISION engineering: report of the international television conference held in London, 31st May–7th June 1962, [organized by the Institution of Electrical Engineers, in association with the Institute of Radio Engineers, the British Kinematograph Society, the Television Society]. Institution of Electrical Engineers, ©1963. [distr. by Blackie] viii, 577p, illus, tables, diagrs, refs. 240s.

B Covers all aspects of design and utilization of television but little is given on domestic receivers. Valuable record of current practice.

TOWERS, T. D.

535

Transistor television receivers: a survey of world circuitry, British, American, German, Russian, Japanese. London, Iliffe; NY, Rider, ©1963. 194p, diagrs. 55s.

B Television receiver is divided into its conventional sections and a chapter is devoted to each; the forms of circuitry employed in the various countries are compared. Chapter on servicing is included.

621.6 Fluid Distribution. Pipes. Pumps.

ENGINEERING EQUIPMENT USERS ASSOCIATION

536

Chemical resistant linings for pipes and vessels. Constable for the Association, 1963. ix, 129p, tables, diagrs. 30s. *EEUA handbook*, no. 6.

B Recommendations for design and construction of industrial drains for corrosive effluents and for appropriate linings. Intended as additional material to C.P. 301 *Building drainage*.

ENGINEERING EQUIPMENT USERS ASSOCIATION

537

Thermal insulation of pipes and vessels. Part 1: general principles; part 2: insulation of hot surfaces (excluding refractories). Constable for the Association, 1963. ix, 92p, tables, diagrs. 30s. *EEUA handbook*, no. 12.

B Part 1 lists the relevant British Standards and Codes of Practice, defines heat transmission terms, and describes the theory of heat flow; Part 2 deals with insulating materials for industrial steam raising plant.

629.1 Transport Engineering

ARGYRIS, J. H. and KELSEY, S.

538

Modern fuselage analysis and the elastic aircraft: basic theory. Butterworths, 1963. xii, 176p, diagrs, refs. 95s.

C Matrix techniques are applied to structural analysis problems of arbitrary fuselage shapes, from a systematic development relying on digital computation. This comprehensive treatise should also have application for non-aeronautical structures.

MORLEY, L. S. D.

539

Skew plates and structures. Oxford, NY, [etc], Pergamon P, 1963. xi, 128p, tables, diagrs, refs. 45s. *International series of monographs in aeronautics and astronautics: division 1, solid and structural mechanics*, vol. 5.

C Fundamental equations are derived, and methods of analysis given for homogenous, anisotropic, swept plates and applied to a swept box structure. Treatment is lucid, rigorous and timely. Valuable review of the literature is provided.

ORDWAY, F. I. and others

540

Basic astronautics: an introduction to space science, engineering, and medicine, by F. I. Ordway, J. P. Gardner, M. R. Sharpe. Prentice-Hall International, [1963]. xiii, 587p, illus, tables, diagrs, refs. 4 gns. *Prentice-Hall space technology series*.

A Well documented survey of the whole field of extraterrestrial exploration showing, for the first time, how the basic scientific and technological disciplines are integrated and applied to this new and complex activity.

63 Agriculture. Forestry. Livestock. Fisheries

- AITKEN, F. C. 541
 Feeding of fur-bearing animals. . . . Farnham Royal (Bucks), Commonwealth
 Agricultural Bureaux, 1963. [6], 105p, tables, refs. 20s. *Commonwealth Bureau
 of Animal Nutrition, Rowett Research Institute, technical communication no. 23.*
C Typically thorough C.A.B. review of the scientific literature from Scandinavia, Russia, the
 USA, and Canada. Lengthy treatment of fox and mink; also covers chinchilla, nutria,
 beaver, musk-rat, raccoon, and ferret. Nutritional diseases are also covered.

65 Business Techniques. Management

- DAVIES, E. *ed.* 542
 Traffic engineering practice. Spon, 1963. xviii, 325p, plates, tables, diagrs, refs.
 75s. *Spon's civil engineering series.*
B-C First attempt to produce a book dealing exclusively and comprehensively with practice
 in Great Britain.
- HENDRY, J. W. 543
 Work study in the laundry and dry cleaning industries: more profit from
 modern methods. Iliffe Books, ©1963. 89p, plates, tables, diagrs. 25s.
A Clear and concise explanation of how the tools of work study might be applied to these
 industries. Of immediate value to anyone concerned with these, but adds nothing to the
 general field of work study.

66 Chemical Technology

- BALLARD, W. E. 544
 Metal spraying and the flame deposition of ceramics and plastics. 4th rev. ed.
 Griffin, ©1963. xii, 591p, illus, tables, diagrs, refs. 96s.
B-C Comprehensive and up-to-date study of metal coatings mainly from a practical view-
 point, in which particular attention is paid to the properties and uses of metal-sprayed
 surfaces. 3rd edition *Metal spraying and sprayed metal*, 1948.
- BRENNER, A. 545
 Electrodeposition of alloys: principles and practice; vol. 1, [general survey,
 principles, and alloys of copper and of silver]. NY, London, Academic P, 1963.
 xx, 714p, illus, tables, diagrs, refs. 171s 6d.
C Comprehensive, original and authoritative treatise—the first for fifty years—covering the
 subject from its earliest origin up to 1960, of considerable significance to both electro-
 chemists and plating technologists.
- HOLLAND, C. D. 546
 Multicomponent distillation. Englewood Cliffs (NJ), Prentice-Hall, 1963. xiii,
 506p, tables, diagrs, refs. 90s. *Prentice-Hall international series in the physical
 and chemical engineering sciences.*
C Description of the calculation procedure for predicting multicomponent distillation
 column performance. The detailed analysis of the methods adopted indicates the difficulty
 as well as the simplicity of the methods used.
- HOWARD-WHITE, F. B. 547
 Nickel: an historical review. Methuen, 1963. xiii, 350p, illus, tables, bibliog.
 45s.
A Fascinating account of the history, eventual identification, and development of production
 processes for nickel, with incidental portraits of the men primarily involved.
- IMPERIAL CHEMICAL INDUSTRIES LIMITED 548
 Limestone as a raw material in industry, by F. P. Stowell. OUP for ICI Ltd,
 1963. viii, 55p, plates, tables, diagrs, bibliog. 10s 6d.
A Interesting, simple account of the quarrying of limestone, the chemical reactions and pro-
 cesses in making quicklime, hydrated lime and lime putty, and of some of the numerous
 applications of limestone products.

- KLEBER, E. V. and LOVE, B. 549
Technology of scandium, yttrium and the rare earth metals. Oxford, NY, [etc.], Pergamon P, 1963. ix, 205p, tables, diagrs, bibliog. 50s.
C Uncritical review of the metallurgical, mechanical, and physical properties of the rare earth metals and alloys, based on a comprehensive literature survey up to mid-1960 originally carried out for the US Air Force.
- MCINTOSH, J. D. 550
Concrete and statistics. C.R. Books, 1963. 139p, tables, diagrs, refs. 35s.
B Deals with the use of statistics to control the making of concrete, with emphasis on the drafting and implementing of specifications and some discussion on structural design. Valuable to engineers and contractors.
- MOLYNEUX, F. 551
Chemical plant design—1. Butterworths, 1963. vii, 117p, tables, diagrs, refs. 50s.
C Collection of seventeen papers on chemical engineering topics which have all been published elsewhere. Although claiming to illustrate basic principles, the selection and treatment of the subject matter seem rather empirical.
- SINGER, F. and SINGER, S. S. 552
Industrial ceramics. C & H, 1963. ix, 1455p, illus, tables, diagrs, bibliog. 12 gns.
C Deals comprehensively with raw materials, manufacture, properties, and testing of pottery, clay building materials, refractories, electro-, chemical-, and engineering ceramics; the vast amount of tabulated data will render the book of great value as a work of reference.
- THOMAS, RICHARD, & BALDWIN'S LIMITED 553
Chemical analysis of flat rolled steel products, compiled by C. E. A. Shanahan. The Company, 1962 [i.e. 1963]. x, 115p, tables, diagrs. 50s.
C Revision and extension of the work first published in 1949, to include modern techniques for analysis of elements normally encountered in flat rolled steel and coated steel products such as tin, zinc, and terne.
- WATT, P. R. 554
Molecular stills. C & H, 1963. xi, 351p, illus, tables, diagrs, refs. 70s. *High vacuum series*, vol. 2.
C Comprehensive treatise on the theory and practice of degassing and molecular distillation from both laboratory and industrial aspects.

67/68 Manufactures

- MANUAL of cotton spinning, ed. by A. F. W. Coulson and P. W. Harrison; vol. II, part II, opening and cleaning, by W. A. Hunter and C. Shrigley. Butterworths for the Textile Institute, 1963. x, 174p, illus, tables, diagrs. 40s.
B Describes the history, machines, principles, and control of the first process in the cotton spinning mill. No corresponding book has been written in English for more than thirty years; it therefore forms a valuable addition to the literature.
- PETERS, R. H. 556
Textile chemistry; vol. 1, the chemistry of fibres. Amsterdam, Elsevier, 1963. 477p, tables, diagrs, bibliog. 75s.
B Treatment of the chemistry of synthetic and natural fibres for the student of chemistry. Many references to original literature.

7 THE ARTS

77 Photography

- BONI, A. ed. 557
Photographic literature: an international bibliographic guide to general and specialized literature on photographic processes; techniques; theory; chemistry; physics; apparatus; materials and applications; industry; history; biography; aesthetics. NY, Morgan and Morgan in association with R. R. Bowker, 1962. [distr. Fountain P, 1963] xvi, 335p. 8 gns.
D More than 12,000 books, pamphlets, and periodical articles are grouped under 1,200 or more subject headings, with author index. Thoroughly reliable and up-to-date.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

Subject Index

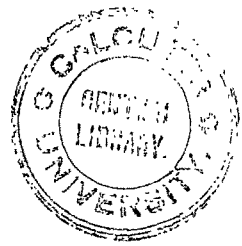
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October 1963

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3 SOCIAL SCIENCES

31 Statistics

- BUCKLAND, W. R. and FOX, R. A. 558
Bibliography of basic texts and monographs on statistical methods, 1945-1960.
2nd ed. Edinburgh, London, O & B, for the International Statistical Institute,
1963. vii, 297p. 35s.
D 1st ed. 1951. Collection of authoritative reviews of nearly two hundred of the most important basic texts on statistical methods published in the English language from 1945 to 1960. Invaluable for librarians, students of statistics, and practising statisticians.

- LEWIS, E. V. 559
Statistical analysis: ideas and methods. Princeton (NJ), London, [etc], Van Nostrand, ©1963. x, 484p, tables, diagrs. 62s.
B Good text for non-mathematical students: the material is well organized, with examples and exercises (without answers), and contains topics not always found in this kind of book.

5 MATHEMATICS AND NATURAL SCIENCES

51 Mathematics

- DAVIES, D. W. 560
Digital techniques. London, Glasgow, Blackie, 1963. xi, [2], 158p, plates, diagrs, bibliog. 30s. *Electronic user series*.
B Practical guide for the experimenter in the collection, recording, and processing of experimental data in digital systems.
HILDEBRANDT, T. H. 561
Introduction to the theory of integration. NY, London, Academic P, 1963. ix, 385p, refs. 100s.
B Formal pure mathematics study based on the classical theory of Stieltjes and Lebesgue integration with the inclusion of basic abstract procedures. Student text for those already familiar with the theory of functions of a real variable.

- LEFSCHETZ, S. 562
Differential equations: geometric theory. 2nd ed. NY, London, Interscience, [1963]. x, 390p, bibliog. 75s. *Pure and applied mathematics, vol. VI*.
B 1st ed. 1957. Detailed study covering linear systems, stability, first-order equations, periodic systems, two-dimensional systems, second-order equations, and oscillations. Emphasis on vectors, matrices, and topological concepts. No applications.

52 Astronomy. Surveying. Geodesy

- COMMITTEE ON SPACE RESEARCH and INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS 563
Use of artificial satellites for geodesy: proceedings of the first international symposium . . . , Washington, DC, April 26-28, 1962, ed. by G. Veis. Amsterdam, North-Holland Publ. Co., 1963. xi, 424p, plates, tables, diagrs, refs. 86s.
C Almost every aspect of geodetic investigations by artificial satellites is represented in this work which includes accounts of dynamics, tracking, reference systems, geophysical implications, and a useful comparison with classical methods. Essential for research workers in this field.
JASTROW, R. and CAMERON, A. G. W. eds 564
Origin of the solar system: proceedings of a conference held at the Goddard Institute for Space Studies, New York . . . January 23-24, 1962. NY, London, Academic P, 1963. xiii, 176p, tables, diagrs, refs. 54s.
C Readable volume provides an authoritative review of theories of the origin of the solar system from Descartes to the present day, including the formation and dissipation of the solar nebula, properties of meteorites, and thermal histories of the planets.

53 Physics and MechanicsBERNATH, L. *ed.*

565

Heat transfer—Houston: [5th national heat transfer conference jointly sponsored by the American Institute of Chemical Engineers and the American Society of Mechanical Engineers, Houston, Texas, August 5–8, 1962]. NY, the Institute, 1963. iv, 229p, illus, tables, diagrs, refs. \$15; \$4 (members of the A.I.C.E.). *Chemical engineering progress symposium series*, vol. 59, no. 41. Paperback.

C Well-presented book useful to the chemical and heat engineer, containing some twenty-five conference papers and abstracts of papers published elsewhere, dealing with the many recent developments in the field.

EDMISTER, W. C. *ed.*

566

Thermodynamics. NY, American Institute of Chemical Engineers, 1963. [4], 141p, tables, diagrs, refs. \$15; \$4 (members of the A.I.C.E.). *Chemical engineering progress symposium series*, vol. 59, no. 44. Paperback.

C Collection of eighteen research papers on various topics associated with the thermodynamics of gases and the gas-liquid equilibrium state. Work recorded is theoretical and/or experimental and the results are important to research chemists, physicists, and chemical engineers.

GREAT BRITAIN. Department of Scientific and Industrial Research. *Building Research Station*

567

Architectural physics: lighting, by R. G. Hopkinson. HMSO, 1963. xii, 360p, illus, tables, diagrs, bibliog. 50s.

B–C Part 1 of this important textbook introduces architectural students to modern lighting design by way of environmental physics; Part 2, consisting of collected papers, reflects the contribution of the author and his colleagues at the Building Research Station to the technology of lighting buildings.

KUPER, C. G. and WHITFIELD, G. D.

568

Polarons and excitons: Scottish Universities' summer school, 1962. Edinburgh, London, O & B, 1963. xvi, 381p, tables, diagrs, refs. 110s.

C Important volume, with separate chapters by internationally known authors, thoroughly covers the mathematical details of the theory of excitons and polarons and is essential for other experts in this field.

539.1 Nuclear Physics

BARKAS, W. H.

569

Nuclear research emulsions; vol. 1, techniques and theory. NY, London, Academic P, 1963. xvi, 518p, illus, tables, diagrs, bibliog. 128s 6d. *Pure and applied physics*, vol. 15.

C Intended as a comprehensive work on the subject, especially for advanced students in physical sciences, earth and biosciences. This volume presents information of a practical nature and contains much new, previously unpublished material.

KAPLAN, I.

570

Nuclear physics. 2nd ed. Reading (Mass), London, Addison-Wesley, 1963. xiv, 770p, tables, diagrs, bibliog. 64s.

B 1st ed. 1955. Revised standard textbook for introductory courses in nuclear physics suitable for engineers and physicists with a background of two years of classical physics and a working knowledge of calculus.

54 Chemistry

571

ADVANCES in X-ray analysis; vol. 6, ed. by W. M. Mueller and M. Fay. Proceedings of the eleventh annual conference on application of X-ray analysis held August 8–10, 1962, sponsored by University of Denver, Denver Research Institute. NY, Plenum P, 1963. xi, 480p, illus, tables, diagrs, refs. \$17.50.

C Contains forty-four revision papers and accounts of recent work in a large variety of applications of X-ray analysis to chemical and physical problems.

- AMERICAN CARBON COMMITTEE and PENNSYLVANIA STATE UNIVERSITY 572
Proceedings of the fifth conference on carbon held at the Pennsylvania State University, University Park, Pennsylvania [June 1961]; vol. 2. NY, Oxford, [etc], Pergamon P, 1963. xii, 673p, illus, tables, diagrs, refs. 140s.
C Contains the remaining fifty-seven papers held over from vol. 1 (item 142) and, although the delay in publication is regrettable, the quality and interest of the papers make it an essential companion to its predecessor.
- FOERST, W. ed. 573
Newer methods of preparative organic chemistry; vol. II, tr. by F. K. Kirchner. NY, London, Academic P, 1963. xv, 417p, tables, refs. 103s 6d.
C Fourteen review articles by German workers originally published in *Angewandte Chemie* give details of the application of selected reagents or reactions, occasionally with experimental details.
- INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY. Section of Analytical Chemistry. *Commission on Equilibrium Data* 574
Solubility constants of metal oxides, metal hydroxides and metal hydroxide salts in aqueous solution: Löslichkeitskonstanten von Metalloxiden, -Hydroxiden und -Hydroxidsalzen in wässrigen Lösungen. By W. Feitknecht and P. Schindler. Butterworths, 1963. Reprint from *Pure and Applied Chemistry*, vol. 6, no. 2, p. 130-99. 12s 6d.
B-C Solubility data have been compiled from the literature and critically assessed. The resulting information is dealt with systematically, progressing from determination of solubility constants to a table of constants for forty-one metals. English and German text.
- READ, J. 575
Prelude to chemistry: an outline of alchemy, its literature and relationships. 2nd ed. Bell, [1939] 1963. xxiv, 328p, plates, bibliog. 35s.
A Attractively written and well-documented survey of the technique, significance, and development of alchemy, enriched by many quotations and profusely illustrated. Limited re-issue of 1961 reprint of 1939 2nd ed.
- SHINODA, K. and others 576
Colloidal surfactants: some physicochemical properties. NY, London, Academic P, 1963. [10], 310p, tables, diagrs, refs. 92s. *Physical chemistry*, vol. XII.
C Japanese work in this important and rapidly advancing field is neither well known nor accessible, so the principal merit of this book is its authoritative appraisal of the Japanese work which is set in context with the better-known Western work.
- WELCHER, F. J. ed. 577
Standard methods of chemical analysis; vol. 2, parts A and B, industrial and natural products and noninstrumental methods. 6th ed. Princeton (NJ), London, [etc], Van Nostrand, 1963. 2 vols. 9 gns.
C 5th ed. 1939. Volume II of this highly regarded textbook has been largely rewritten and considerably expanded and now consists of two separate parts.
- WHITHAM, G. H. 578
Alicyclic chemistry. Oldbourne P, ©1963. [8], 119p, tables, diagrs, refs. 1 gn. *Oldbourne chemistry series*.
B Good selective review of important topics in alicyclic chemistry directed mainly at advanced undergraduate students.
- WILLIAMS, J. W. ed. 579
Ultracentrifugal analysis in theory and experiment. NY, London, Academic P, 1963. xvii, 282p, illus, tables, diagrs. 80s.
C Seventeen principal papers presented at a conference at the Rockefeller Institute in June 1962 cover development in the transport and equilibrium theories of sedimentation, and certain advances in ultracentrifugation practice. For practising biochemists and theoretical physical chemists.
- 55 Geology. Meteorology**
- JUNGE, C. E. 580
Air chemistry and radioactivity. NY, London, Academic P, 1963. xii, 382p, tables, diagrs, refs. 96s 6d. *International geophysics series*, vol. 4.
C Up-to-date, critical, and authoritative work of great value to physicists and chemists concerned with the constitution of the atmosphere; interesting recent work on radioactive fallout is included.

57 Anthropological and Biological Sciences

581

ADVANCES in applied microbiology; vol. 5, ed. by W. W. Umbreit. NY, London, Academic P, 1963. xi, 385p, tables. 93s.

C Comprising ten reviews, mostly by American authors, covering applied topics ranging from those which, like 'Aeration in the laboratory', have wide appeal, to the exotic 'Generation of electricity by microbial action', this volume maintains the high standard of the series.

582

INTERNATIONAL review of cytology; vol. 15, ed. by G. H. Bourne and J. F. Danielli. Prepared under the auspices of the International Society for Cell Biology. NY, London, Academic P, 1963. ix, 444p, illus, tables, diagrs, refs. 114s 6d.

C Another well-produced volume in this valuable series covering such fields as lamp brush chromosomes, intracellular transfer of genetic information, mechanisms of gametic approach in plants, cellular basis of morphogenesis plant tissue culture, regeneration of mammalian liver, collagen formation, mast cells, and lipid absorption.

LEVINE, L. ed.

583

Cell in mitosis: proceedings of the first annual symposium held under the provisions of the Wayne State Fund Research Recognition Award. NY, London, Academic P, 1963. xi, 274p, illus, tables, refs. 80s.

C Valuable collection of ten review articles and discussions on various aspects of cell-division processes, with emphasis on ultrastructural changes and physiological mechanisms.

LOCKE, M. ed.

584

Cytodifferentiation and macromolecular synthesis: [21st symposium of the Society for the Study of Development and Growth, Asilomar, California, June 1962]. NY, London, Academic P, 1963. xi, 274p, illus, tables, diagrs, refs. 80s.

C Well-produced and stimulating volume containing thirteen papers by geneticists, biochemists, and cytologists, on protein synthesis and problems of differentiation in and among cells.

SMITH, W. ed.

585

Mechanisms of virus infection. London, NY, Academic P, 1963. ix, 368p, plates, tables, diagrs, bibliog. 80s.

B-C Dealing with infection from the viewpoint of the virus biologist, its lucid presentation of modern knowledge of the virus-host relationship will make this book valuable to student, teacher, and research worker.

577.1 Biochemistry

BOYER, P. D. and others, eds

586

Enzymes, ed. by P. D. Boyer, H. Lardy, K. Myrback; vol. 7, oxidation, and reduction (Part A), nicotinamide nucleotide-linked enzymes, flavin nucleotide-linked enzymes. 2nd rev. ed. NY, London, Academic P, 1963. xxi, 726p, tables, diagrs, refs. 150s.

C Very high standard and practical value of this exemplary reference work for research workers is maintained in the latest volume which deals with an important group of enzymes in twenty-six highly authoritative and fully documented articles.

HOCHSTER, R. M. and QUASTEL, J. H.

587

Metabolic inhibitors: a comprehensive treatise; vol. 1. NY, London, Academic P, 1963. xx, 669p, tables, diagrs, refs. 186s.

C Fifteen authoritative review articles remarkable for their comprehensive documentation making this an important reference work for research workers in biochemistry. This volume deals mainly with natural compounds and their close analogues, analogues of amino acid, fats, steroids, carbohydrates, polypeptides, purines, vitamins, and hormones, also with sulphonamide and folic acid antagonists.

KARLSON, P.

588

Introduction to modern biochemistry, tr. by C. H. Doering. NY, London, Academic P, 1963. xviii, 433p, tables, diagrs, refs. 80s.

B Assuming an appreciable knowledge of chemistry, it deals systematically and in some detail with biological reactions, especially with their mechanisms and their relationships. Biological techniques are virtually ignored, but cytological and anatomical relationships are discussed. Especially interesting textbook for teachers of the subject.

- WEBB, J. L. 589
 Enzyme and metabolic inhibitors; vol. 1, general principles of inhibition. NY, London, Academic P, 1963. xxi,949p, tables, diagrs, bibliog. 186s.
 C First of four volumes which are intended to provide, for the first time, a central source of information on the subject. This well-produced volume provides an excellent summary of our knowledge about enzymes.

58 Botany

- EVANS, L. T. *ed.* 590
 Environmental control of plant growth: proceedings of a symposium held at Canberra, Australia, August 1962. NY, London, Academic P, 1963. xvii,449p, illus, tables, diagrs, refs. 121s 6d.
 C Text consists of twenty-four contributions and summaries of subsequent discussions presented at an international symposium dealing with current research on the influence of climate on the growth of plants.
- SWAIN, T. *ed.* 591
 Chemical plant taxonomy. London, NY, Academic P, 1963. ix,543p, tables, diagrs, refs. 110s.
 C Two essays by botanists and fourteen by biochemists interested in taxonomy, discussing the extent to which data obtained by modern, rapid methods of biochemical analysis can be used to solve problems in plant taxonomy.

6 APPLIED SCIENCES

62 Engineering and Technology

- ENGINEERING EQUIPMENT USERS ASSOCIATION 592
 Surface preparation, protection and finish painting of steelwork. Rev. ed. Constable for the Association, 1963. v,68p, tables. 15s. *EEUA handbook, no. 3.*
 A Useful guide to the selection and use of corrosion prevention treatments and contains detailed summaries in the form of specifications, of methods of cleaning and protecting steel.
- PIPES, L. A. 593
 Matrix methods for engineering. Englewood Cliffs (NJ), Prentice-Hall, 1963. xiii,427p, diagrs, refs. 78s. *Prentice-Hall international series in applied mathematics.*
 B Describes fundamental properties and manipulation of matrices including eigenproblems. Applications given in elasticity, structures, classical mechanics, vibration, electrical networks, and transmission lines. Treatment is detailed, precise, and practical. For students, applied mathematicians, physicists, and engineers in general.
- TSE, F. S. *and others* 594
 Mechanical vibrations, by F. S. Tse, I. E. Morse, R. T. Hinkle. Prentice-Hall International, 1963. xi,523p, illus, tables, diagrs, refs. 3 gns.
 B Written for the student of mechanical engineering, presents fundamentals of vibrations and background for advanced studies. Main merit lies in a chapter on computer methods as applied to vibrations.

621 Mechanical and Electrical Engineering

- AMERICAN INSTITUTE OF CHEMICAL ENGINEERS 595
 Preprints of technical papers, fourth joint automatic control conference, University of Minnesota, Minneapolis, . . . , June 19-21, 1963. NY, the Institute, 1963. xiv,680p, illus, tables, diagrs, refs. \$12. Paperback.
 C This annual automatic control conference, jointly sponsored by the American bodies representing professional electrical, electronics, instrument, and mechanical engineers, was especially important this year because it included three-quarters of the American contribution to the later world congress of the International Federation of Automatic Control.
- JONES, E. J. H. 596
 Production engineering: jig and tool design. . . . 7th ed. Newnes, 1963. xii,355p, illus. 40s.
 B 6th ed. 1956. Includes new information on ceramic cutting tools. For production engineers, students, and lecturers in technical colleges.

621.039 NUCLEAR ENGINEERING

KRAMERS, H. and WESTERTERP, K. R.

597

Elements of chemical reactor design and operation. C & H, 1963. xviii, 245p, tables, diagrs, refs. 60s.

C Evolved from a lecture course for senior chemical engineering students at Delft Technical University, itself a high recommendation. Material and energy balances and also economic balances are thoroughly dealt with. This is not a reference book; it should be studied in full to obtain maximum benefit.

621.3 Electrical Engineering

MALEY, G. A. and EARLE, J.

598

Logic design of transistor digital computers. Englewood Cliffs (NJ), Prentice-Hall, 1963. x, 322p, tables, diagrs, refs. 73s. *Prentice-Hall international series in electrical engineering*.

C In line with the most modern thinking on digital computer design, this is one of the few texts to concentrate on *nor* and *rand* logic.

SOBOTKA, H. Z.

599

Industrial HF heat generators. [Eindhoven], Philips Technical Library; [London, Cleaver-Hume P], 1963. x, 91p, tables, diagrs, bibliog. 15s 6d.

B Discusses the theoretical principles, working methods, components, testing, servicing and operation, and practical applications of the equipment. For those making practical use of HF heating generators and with no specialized knowledge of electronics.

621.7 Workshop Practice

MOODY, B. E.

600

Packaging in glass. Hutchinson, 1963. xi, 304p, illus, tables, diagrs. 3 gns.

A Excellent practical summary of the advantages, limitations, and technical performance of glass as a packaging material. There has long been a need for such information to be made available to the many firms who use glass in this way and this book, written in extremely simple terms and remarkably well illustrated, is the first book to meet this need.

ORD, H.

601

Engineering drawing and materials for mechanical engineering technicians; vol. II. EUP, 1963. viii, 120p, plates, diagrs. 12s 6d. *General technical series*.

B Completes the work required for the subject in Part I of the Mechanical Engineering Technicians' Certificate which is included in Syllabus no. 293 of the City and Guilds courses, and comparable examinations. (Vol. I: *Aslib Book List*, vol. 27, no. 6, June 1963, item 402.)

624 Structural Engineering

AU, T.

602

Elementary structural mechanics. Prentice-Hall International, 1963. [14], 521p, tables, diagrs, refs. 3 gns. *Civil engineering and engineering mechanics series*.

B Introduction to simple problems of structural analysis, dealing mostly with statically determinate and elastic systems. Well-presented textbook for engineering students.

PARADISE, R. S. and CHURCH, G. A.

603

Examples in applied mechanics for National Certificate students: second year (O2). London, Glasgow, 1963. [6], 154p, tables, diagrs. 10s 6d.

B Useful book of worked examples in elementary statics and dynamics for second-year National Certificate students and those preparing for the Joint Part I examinations of the engineering institutions.

629.1 Transport Engineering

BAUSS, W. ed.

604

Radio navigation systems for aviation and maritime use: a comparative study. Joint report by the expert committees "Ortung" of the Nachrichtentechnische Gesellschaft (NTG), Frankfurt/M, and "Navigationsverfahren und -Technik" of the Ausschuss für Funkortung (AFO), Düsseldorf, January 1959. Revised in the beginning of 1961. Oxford, NY, [etc], Pergamon P, for the Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization, 1963. ix, 195p, tables, diagrs, bibliogs. 70s. *Agardograph* 63.

B Revised translation of the German edition, dealing only with those navigational aids where the signals received from a shore-based station are processed on board. Each system is described, and a brief comparative assessment of the accuracy and range of each follows.

- FOX, W. J. 605
 Marine auxiliary machinery . . . , rev. by W. J. Fox. 3rd ed. Newnes, 1963. viii, 456p, illus, tables, diagrs. 50s.

B 2nd ed. 1956. Covers all marine auxiliary services and their machinery, steering gear, propellers, refrigeration, heating and ventilation, safety equipment, stabilizers, etc. This enlarged edition also includes corrosion, oily-water separators, fresh-water installations, fire equipment, and auxiliary diesel engines. Well illustrated.

- ORDWAY, F. I. ed. 606
 Advances in space science and technology; suppl. 1, space carrier vehicles: design, development, and testing of launching rockets, by O. H. Lange and R. J. Stein. NY, London, Academic P, 1963. viii, 317p, illus, tables, diagrs, refs. 36s.

C Written by two authors connected with the *Saturn* project, the book reviews first-generation vehicles then elaborates on the fabrication, aerodynamics, guidance, control, checkout, and launching of large carrier vehicles.

- STUHLINGER, E. ed. 607
 Electric propulsion development: a selection of technical papers based mainly on the American Rocket Society electric propulsion conference . . . , Berkeley, California, March 14-16, 1962. NY, London, Academic P, for the American Institute of Aeronautics and Astronautics, 1963. xiii, 748p, illus, tables, diagrs, refs. 4 gns. *Progress in astronautics and aeronautics*, vol. 9.

C Thirty-five papers on electrothermal, electrostatic, and electromagnetic propulsion developments, including the problems of flight testing and the application of electrical methods of propulsion to space missions.

65 Business Techniques. Management

- CURWEN, H. 608
 Processes of graphic reproduction in printing, rev. by C. Mayo. 3rd ed. Faber, 1963. xvi, 171p, illus, plates, bibliog. 36s.

B 2nd ed. 1958. Conceived as a textbook for artists working on book illustrations, this expanded edition incorporates new methods and many more excellent illustrations. Clear and thorough text, exemplary design. For all concerned with artwork, typography, bibliography, printing.

- STEWART, H. V. M. 609
 Guide to efficient maintenance management: with a foreword by Sir Miles Thomas. Business Publications, 1963. x, 157p, tables, bibliog. 40s.

C Intended for the practical maintenance engineer, it covers the procedures and techniques applicable to maintenance in large and small factories, including those which have proved effective in other spheres of industrial production.

66 Chemical Technology

- BRENNER, A. 610
 Electrodeposition of alloys: principles and practice; vol. II, [practical and specific information]. NY, London, Academic P, 1963. xix, 565p, tables, diagrs, refs. 157s.

C Second volume of this work (Vol. I: item 545) deals with the practical aspects of the deposition of alloys other than the principal alloys of copper, which were covered in vol. I, and reaches the same high standard of treatment and coverage.

- HEINY, R. L. ed. 611
 Statistics and numerical methods in chemical engineering. NY, American Institute of Chemical Engineers, 1963. 123p, tables, diagrs, refs. \$15; \$3.75 (members of the A.I.C.E.). *Chemical engineering progress symposium series*, vol. 59, no. 42. Paperback.

C Collected papers, presented at the Tulsa, Oklahoma, meeting of September 1960, offer to chemical engineers a challenging selection of applications of the mathematical tools at their disposal.

INSTITUTE OF METALS

612

Metallurgy of beryllium: proceedings of an international conference organized by the Institute . . . and held at the Royal Commonwealth Society, London, on 16-18 October 1961. C & H, for the Institute, 1963. x, 879p, illus, tables, diagrs, refs. 10 *gns.* *Institute of Metals monographs and report series, no. 28.*

C Proceedings comprising some seventy original papers on deformation, fracture, ductility, corrosion, and irradiation properties of beryllium. Manufacturing aspects are also presented together with summaries of discussions, thus making this volume the most comprehensive source of information on the subject.

613

SPECIAL ceramics 1962: proceedings of a symposium held by the British Ceramic Association, ed. by P. Popper. London, NY, Academic P, for the Association, 1963. xiii, 479p, illus, tables, diagrs, refs. 5 *gns.*

C Series of twenty-five papers covering recent work on the subject, including refractory materials for very high temperatures, formation of refractories, coatings by pyrolysis, and new equipment for measuring properties such as thermal conductivity and expansion.

67/68 Manufactures

681 Precision Mechanisms

HAAS, G.

614

Fundamentals and components of electronic digital computers. [Eindhoven], Philips Technical Library; [London, Cleaver-Hume P], 1963. x, 247p, illus, tables, diagrs, bibliog. 2 *gns.*

C Sections on fundamental digital computer operations are introductory in nature, but much of the treatment of components and circuits is at an advanced level. There is particularly thorough discussion of magnetic core storage systems and of flip-flop circuits.

615

VACUUM microbalance techniques; vol. 3, proceedings of the Los Angeles conference, October 30, 1962. Ed. by K. H. Behrndt. NY, Plenum P, 1963. xvi, 215p, illus, diagrs, refs. \$9.50.

C Thirteen papers describe various types of microbalances used under vacuum conditions, some of the physical factors affecting their performance, and a variety of uses to which they are put.

69 Building Industry

BARRY, R.

616

Construction of buildings; vol. 3, single storey frames, shells and lightweight coverings. Crosby Lockwood, 1963. [6], 105p, diagrs, refs. 20s spiral bound; 25s cloth.

B Third volume in a notably up-to-date series of students' textbooks describes and illustrates roofing and walling systems now common in factory, warehouse, and school construction, and certain to be used in future house building.

WILLIS, A. J.

617

Elements of quantity surveying. 5th rev. ed. Crosby Lockwood, 1963. xi, 278p, diagrs. 25s.

B 4th ed. 1948 (repr. 1962). New edition still of considerable significance in adequately filling a real need for a well-written textbook particularly for professional examination candidates.

7 THE ARTS

77 Photography

WHEELER, L. J.

618

Principles of cinematography: a handbook of motion picture technology. 3rd ed. Fountain P, 1963. 424p, plates, tables, diagrs, bibliog. 75s.

B General background book for the student and beginner, this standard work covers a wide field but omits colour photography and the artistic aspects of film production. Concentrating on the mechanics of cinematography, this edition has been revised to include the narrow-gauge film in television.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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November 1963

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ASLIB BOOK LIST VOL. 28 NO. 11 NOVEMBER 1963

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3 SOCIAL SCIENCES

31 Statistics

LEEMING, J. J.

619

Statistical methods for engineers. London, Glasgow, Blackie, 1963. [10], 146p, tables, bibliog. 35s.

B Should give the engineer, particularly the student and the traffic engineer, a useful working knowledge of statistical methods. Covers tests of significance (t, chi-square, analysis of variance, etc.) and includes many fully worked-out examples in the traffic field.

5 MATHEMATICS AND NATURAL SCIENCES

620

HISTORY of science: an annual review of literature, research and teaching; vol. II, 1963. Edited by A. C. Crombie and M. A. Hoskin. Cambridge, Heffer, ©1963. vi, 177p, refs. 21s (paperback); 30s.

C *History of Science* is an annual which reviews progress in the history of science for those actively engaged in the subject as research workers or teachers. Volume II comprises a half-dozen full-length articles, ten essay reviews, and a number of shorter book reviews.

51 Mathematics

BEAUMONT, R. A. and PIERCE, R. S.

621

Algebraic foundations of mathematics. Reading (Mass.), Addison-Wesley, 1963. viii, 480p, tables, diags. 66s. *Addison-Wesley series in introductory college mathematics*.

B Intuitive theory of sets is used as the basis for a construction of the real and complex fields leading to an up-to-date study of the theory of equations. Other topics considered are the elementary theory of numbers and the elements of matrix theory.

HEADING, J.

622

Mathematical methods in science and engineering. Arnold, 1963. x, 628p, tables, diags. 50s (board); 35s (paper).

B Collection of worked examples at first-year university level in a course of mathematics for the general science student. The examples cover elementary algebra, calculus and co-ordinate geometry, and statistics.

HILTON, A. M.

623

Logic, computing machines, and automation. Washington (DC), Spartan Books; London, Cleaver-Hume P, 1963. xxi, 427p, tables, diags, bibliog. 72s.

A Central topic is symbolic logic which is presented in a unique style rich with historical allusion, anecdote, and quotation. Treatment of computers is by contrast somewhat brief; maintaining the same, almost journalistic, style but presenting an accurate account of present developments and future possibilities.

ROSENBAUM, R. A.

624

Introduction to projective geometry and modern algebra. Reading (Mass.), Addison-Wesley, 1963. viii, 337p, tables, diags, bibliog. 57s. *Addison-Wesley series in mathematics*.

B Application of matrix algebra to the study of the projective geometry of the conic, with a projective space defined in terms of the rays of a vector space over the field of complex numbers.

SHANKS, D.

625

Solved and unsolved problems in number theory. Washington (DC), Spartan Books, 1962; [London, Cleaver-Hume P, 1963]. ix, 229p, tables, diags, refs. 60s.

B Stimulating introduction, grouped round themes springing from perfect numbers, residue structures, Pythagorean numbers. Problems arise by logical or historical motivation and so may lead to proved theorems or may have to be left as conjectures. Proofs are well explained, with reasons for methods adopted.

53 Physics and MechanicsBROCKELSBY, C. F. *and others*

626

Ultrasonic delay lines. By C. F. Brockelsby, J. S. Palfreeman, and R. W. Gibson. Iliffe Books, 1963. 297p, plates, tables, diags, bibliog. 65s.

B Describes devices which store or memorize, say, one hundred to five thousand elements of information for short times varying from a few millionths of a second to perhaps one hundredth of a second, so that these can be compared with other information subsequently arriving. The devices are of value in radar and in computers.

DAVIES, J. T. *and* RIDEAL, E. K.

627

Interfacial phenomena. 2nd ed. NY, London, Academic P, 1963. xiii, 480p, plates, tables, diags, refs. 107s 6d.

C Deals mainly with interfaces which involve liquids rather than solids; it discusses from a fundamental standpoint adsorption at liquid-vapour and liquid-liquid interfaces and the electrical properties of such interfaces, and considers more briefly the properties of aerosols and emulsions and foams. Written by two well-known authorities in the field, it includes much of their own original work together with a more general treatment and numerous references.

MATTHEWS, P. T.

628

Introduction to quantum mechanics. New York, London, McGraw-Hill, 1963. xii, 170p, diags. 25s.

B Lucid and useful undergraduate textbook, notable for the success with which the basic concepts of the subject are set out with the minimum of mathematical difficulty.

ROWLINSON, J. S.

629

Perfect gas. Oxford, NY, [etc], Pergamon P, 1963. xii, 136p, tables, diags, refs. 30s. *International encyclopaedia of physical chemistry and chemical physics: topic 10, the fluid state, vol. 5.*

C Well-written, authoritative account of the concept of a perfect gas approached from both the classical and the statistical thermodynamic standpoints. The category "advanced" should deter no one. All physical chemists, and most scientists in other disciplines, can learn a lot from this volume.

RUNCORN, S. K. *ed.*

630

Physics in the sixties. Edinburgh, London, O & B, 1963. vii, 112p, plates, diags. 1 *gn.*

A Seven essays, in each of which a distinguished scientist discusses progress and problems in a particular field of research in physics; good background reading for scientists, not only in the field of physics, from undergraduate level upwards.

SMITH, H. J. *and* HARRIS, J. W.

631

Worked examples in engineering thermodynamics. 2nd ed. Macdonald, 1963. xii, 13-548p, tables, diags. 65s.

B Provides detailed answers to a selection of questions from university and other examination papers. Complete revision of first edition, covers steam plant, i.e. engines, compressors, gas turbines, and refrigeration. For students taking parts 1, 2, 3, London B.Sc.(Eng.) examination and comparable tests. Well recommended.

WALSHAW, A. C.

632

Thermodynamics for engineers (a first text-book). 5th ed. Longmans, 1963. xxvi, 642p, tables, diags. 27s 6d.

B Students' first textbook by an experienced author. Purely engineering matters are very well dealt with; fundamental thermodynamics not quite so well. More emphasis is now placed on internal combustion engines, turbines, and jet propulsion and less on steam engines.

539.1 Nuclear Physics

ITALIAN PHYSICAL SOCIETY

633

Nuclear physics: proceedings of the International School of Physics 'Enrico Fermi'. Course XXIII, edited by V. F. Weisskopf. London, NY, Academic P, 1963. 186p, plate, tables, diags. 60s.

C For advanced workers in subject field. Includes five lectures by specialists on Hartree-Fock approximation, nuclear moments, nuclear physics, collective motion and many-body techniques, and compound-nucleus and random-phase approximation, plus four shorter supporting papers.

54 Chemistry

CHADWICK, G. A. 634
Eutectic alloy solidification. Oxford, NY, [etc], Pergamon P, ©1963. iii, 97-182, v-vi p, illus, tables, diagrs, refs. 25s. *Progress in materials science (incorporating Progress in metal physics)*, vol. 12, no. 2, 1953.

C This book is a summary of the theories of eutectic alloy solidification, their nucleation, growth, and microstructure, with a brief reference to commercial alloys, which will also be useful to students and others approaching the subject for the first time.

HAUROWITZ, F. 635
Chemistry and function of proteins. 2nd ed. NY, London, Academic P, 1963. xiv, 455p, illus, tables, diagrs, refs. 80s.

A-D Largely rewritten edition of well-known text by leading authority. The emphasis has been adjusted to deal with recent and current developments, especially regarding structure, special functions, and biosynthesis. Numerous selected references are included. Valuable especially for lecturers and those starting on research.

JOHN, D. H. O. and FIELD, G. T. J. 636
Textbook of photographic chemistry. C & H, 1963. ix, 330p, illus, plates, tables, diagrs. 45s.

B Theory of the photographic process is discussed in detail in so far as negative, positive, and reversal materials are concerned. Other processes and some modern developments are briefly dealt with. Practical directions and formulae are not included. A book for the student of photography and for any photographer who wishes to study the reasons for what he does.

MADLEBERG, C. J. Z. 637
Topics in modern chemistry. Cleaver-Hume P, 1963. xi, 228p, tables, refs. 37s 6d.

B Well-written volume of eight chapters on selected aspects of the philosophy of science, fundamental particles, chemical structure, and recent discoveries in inorganic and organic chemistry. Recommended especially for school science teachers and those who graduated several years ago.

ZWEIG, G. ed. 638
Analytical methods for pesticides, plant growth regulators, and food additives; vol. 1, principles, methods, and general applications. NY, London, Academic P, 1963. xiv, 637p, illus, tables, diagrs, refs. 171s 6d.

C In this, the first of four volumes which should prove a most valuable compilation, the general applications include residue analysis in the food and dairy industries and pesticide analysis in meat products.

55 Geology. Meteorology

DAY, F. H. 639
Chemical elements in nature. Harrap, 1963. 372p, tables, diagrs, refs. 40s.

B Students will find in this book a large amount of useful information on the distribution and movement of normally occurring elements, and on the processes of extraction and industrial output of mineral products.

GREAT BRITAIN. Department of Scientific and Industrial Research 640
Geology of the country around Maidstone (explanation of one-inch geological sheet 288, new series), by B. C. Worrsam and others. HMSO, 1963. viii, 152p, plates, tables, diagrs, refs. 25s. *Memoirs of the Geological Survey of Great Britain*.

B The solid geology of the Maidstone district consists very largely of Cretaceous rocks of typical S.E. England facies. In addition to full descriptions of these formations the authors of Sheet Memoir 288 have devoted considerable space to a detailed account of the interesting drift deposits and superficial structural disturbances found in the area.

- GREAT BRITAIN. Department of Scientific and Industrial Research 641
 Geology of the country around Stockport and Knutsford (one-inch geological sheet 98, new series), by B. J. Taylor and F. M. Trotter, with a contribution by W. Bullerwell. HMSO, 1963. viii, 183p, plates, diagrs, refs. 32s 6d. *Memoirs of the Geological Survey of Great Britain*.
 B Geological Survey Memoir for Sheet 98 describes an area of the South Lancashire-Cheshire plain immediately south of Manchester. The district is largely drift-covered, but new bore-hole and geophysical information has enabled the authors to present a convincing account of the hidden solid geology (Upper Carboniferous to Triassic).

57 Anthropological and Biological Sciences

- BROTHWELL, D. and HIGGS, E. eds 642
 Science in archaeology: a comprehensive survey of progress and research. T & H, 1963. 595p, illus, plates, diagrs, tables. 90s.
 B-C Brings together under one cover the latest scientific techniques used in archaeology and the present state of their development.
- CARRINGTON, R. 643
 Million years of man: the story of human development as a part of nature. Weidenfeld & Nicolson, 1963. xvi, 336p, plates, bibliog. 36s.
 A This superbly told story of the origin and development of man, in particular of the forty thousand years of *Homo sapiens*, is embellished with the author's intelligent and imaginative opinions, and ends with a short philosophical treatment of man's place in nature.
- CROFTON, H. D. 644
 Nematode parasite population in sheep and on pasture. Farnham Royal (Bucks), Commonwealth Agricultural Bureaux, 1963. 104p, tables, diagrs, refs. 10s. *Commonwealth Bureau of Helminthology technical communication no. 35*. Paperback.
 C Authoritative study of the relationships between sheep and their nematode parasites with details of parasite life-histories, seasonal incidence, pasture contamination, and a theoretical consideration of control measures. The approach is ecological, original, and critical, and although a full bibliography has not been attempted the coverage is wide. This small publication is intended for specialists who will find it very interesting and thought-provoking. The presentation is clear and concise.
- GARRETT, S. D. 645
 Soil fungi and soil fertility. Oxford, NY, [etc], Pergamon P, 1963. xviii, 165p, illus. 10s 6d. *Commonwealth and international library of science technology, engineering and liberal studies*.
 B Introduction for university students to the science of soil microbiology through the study of soil fungi and their behaviour, preceded by an account of fungi as living organisms.

577.1 Biochemistry

- PRIDHAM, J. B. ed. 646
 Enzyme chemistry of phenolic compounds: proceedings of the Plant Phenolics Group Symposium, Liverpool, April, 1962. Oxford, NY, [etc], Pergamon P, 1963. 138p, illus, tables. 30s.
 B-C Thirteen papers deal concisely with current knowledge particularly of the appropriate plant and fungal enzymes and of the products from these reactions. The papers are documented and of interest to those chemists, biochemists, and botanists about to start research in this field.

58 Botany

- MAYER, A. M. and POLJAKOFF-MAYBER, A. 647
 Germination of seeds. Oxford, NY, [etc], Pergamon P, 1963. vii, 236p, tables, diagrs, refs. 35s. *International series of monographs on pure and applied biology: plant physiology, vol. 3*.
 B-C Account of recent work on seed germination, referring especially to environmental and internal influences which initiate germination or promote dormancy. Notes on composition and structure of seeds, together with indexes to plants, authors, and subjects also included.

- DARLINGTON, C. D. 648
Chromosome botany and the origins of cultivated plants. 2nd ed. A & U, 1963. xvi, 231p, tables, diagrs, bibliog. 36s.
B Enlarged edition of the companion volume to the *Chromosome Atlas of Flowering Plants*; describes the way in which chromosome information relates to plant evolution, distribution, and classification.

- JENNINGS, D. H. 649
Absorption of solutes by plant cells. O & B, 1963. viii, 204p, tables, diagrs. 30s.
C General discussion, based on recent research on both plants and animals, concerning the mechanisms of solute absorption by plant cells. Will be most used by specialists with a knowledge of the jargon of this important branch of plant physiology.

59 Zoology

- JUBB, K. V. F. and KENNEDY, P. C. 650
Pathology of domestic animals. NY, London, Academic P, 1963. 2 vols. 128s 6d; 171s 6d.
B-C This outstanding book is without rival in the English language, the comprehensive and detailed text is reinforced by very numerous illustrations of the highest quality. It will be invaluable to all workers in the field of special veterinary pathology, whether teachers, research workers or students.

- MANWELL, R. D. 651
Introduction to protozoology. [NY, St Martin's P, ©1961]; London, Arnold, 1963. xii, 642p, tables, diagrs, refs. 60s.
B General account, poorly illustrated, of the ecology, physiology, genetics, and classification of unicellular animals; forty pages are devoted to methods and techniques employed in their study.

6 APPLIED SCIENCES

62 Engineering and Technology

621 Mechanical and Electrical Engineering

- GOODWIN, A. B. 652
Power hydraulics. Cleaver-Hume P, 1963. viii, 230p, diagrs, refs. 2 gns.
B Valuable introduction to problems of fluid mechanics in hydraulic transmission systems: useful to HNC and Diploma students.

- MISCHKE, C. R. 653
Elements of mechanical analysis. Reading (Mass.), Addison-Wesley, 1963. x, 378p, tables, diagrs. 74s. *Addison-Wesley series in engineering sciences: Mechanics and thermodynamics.*
B Written to assist instructor and student cover the gap in courses on mechanics and courses on basic design. The student is expected to read other works to help solve the problems set. References are at the end of each chapter. These will widen his knowledge and help him to identify the problem clearly. A well-written book.

621.039 NUCLEAR ENGINEERING

- FOULTER, D. R. ed. 654
Design of gas-cooled graphite-moderated reactors. London, NY, [etc], OUP, 1963. xii, 692p, plates, tables, diagrs, refs. 4 gns.
B Definitive book on the subject sponsored by the UKAEA, contributors being mainly drawn from the Authority's Reactor Group. Intended for young engineers following post-graduate courses in nuclear engineering or just entering nuclear field. Not intended as a design manual.

- VERKHOVSKII, B. I. 655
Use of radioactive isotopes for checking production processes. Tr. from the Russian by H. S. H. Massey. Oxford, NY, [etc], Pergamon P, 1963. v, 76p, illus, diagrs. 21s. *International series of monographs on nuclear energy, Division IV, isotopes and radiation: volume 2.*
A Originally published Moscow, 1959. Chapter 1, 'Radioactivity and radioactive radiations', deals with fundamentals. Chapter 2, 'Recording radioactive radiations', discusses ionization chambers, gas-discharge, and scintillation counters. Chapter 3 is concerned with the use of radioactive radiations in instruments for checking technological processes.

621.3 Electrical Engineering

DEARNALEY, G. and NORTHROP, D. C.

656

Semiconductor counters for nuclear radiations. Spon, 1963. xx, 331p, tables, diags, refs, bibliog. 55s.

C This book contains the solid-state and nuclear theory necessary for the understanding of semiconductor counters and proceeds to unify the theory in describing the preparation and instrumentation of such counters for the wide variety of applications discussed.

KEMP, P.

657

Alternating current electrical engineering. 10th ed. London, Macmillan; NY, St Martin's P, 1963. ix, 827p, tables, diags. 50s.

B Well-established textbook brought up to date by deletions and additions and by use of the M.K.S. system; probably most useful for reference to basic principles.

621.4 Internal combustion engines

FERGUSON, T. B.

658

Centrifugal compressor stage. Butterworths, 1963. ix, 152p, tables, diags, refs. 35s.

C Basic principles of the flow processes in the centrifugal compressor stage are comprehensively presented after a brief discussion on the fundamentals of thermodynamics and fluid mechanics. For undergraduates and those concerned with turbo-machinery.

621.8 Power transmission

HAMMOND, R.

659

Mobile and movable cranes. C. R. Books, 1963. 251p, illus, tables, diags, bibliog. 45s.

C Guide to the design, operation, maintenance, and applications of various types of crane, referring to specific makes (mostly British) and to actual examples of their use.

621.9 Machine Tools

HABICHT, F. H.

660

Modern machine tools. Princeton (NJ), London, [etc], Van Nostrand, 1963. ix, 259p, illus, tables, diags. 52s 6d.

B Well-thought-out survey of machine tools which includes an account of automatic control. It is well illustrated, but British prospective buyers of the book should note that the machines are illustrated exclusively from American sources.

624 Structural Engineering

GRINTER, L. E.

661

Theory of modern steel structures; vol. no. 1, elastic and plastic analysis by statics. NY, Macmillan, 1963. xxv, 374p. \$9.25.

C Theory of stress analysis related to industrial buildings, truss bridges, plate girders, and office and commercial buildings including ultimate load analysis

625 Railway and Highway Engineering

HAMMOND, R.

662

Railways tomorrow: a study of railway transport problems with special emphasis on the modernization plan for British railways. Redman, 1963. xv, 187p, illus, plates, tables, diags. 30s.

A Review of the operational and engineering problems involved in the modernization of British Railways, of the solutions adopted, and possible further developments, with useful diagrams and statistics.

629.1 Transport Engineering

BOUGHTON, T.

663

Story of the British light aeroplane. Murray, ©1963. xiv, 321p, plates, tables, diags, bibliog. 2 gns.

A This book provides a historical review of the evolution of the small British light aeroplane including detailed information on the various types developed, private flying clubs, and the pilots who took part in air races and long-distance flights.

GATLAND, K. W. *ed.*

664

Spaceflight today. Iliffe Books, in conjunction with the British Interplanetary Society, 1963. v, 254p, illus, plates, tables, diagrs. 30s.

B Contains twenty articles by fifteen specialist authors on rocket engines and other methods of propulsion; the implications of Telstar and the Apollo Programme; meteors, weightlessness and radiation, astronomy, and extra-terrestrial life.

63 Agriculture. Forestry. Livestock. Fisheries

BERGEN, W. VON

665

Wool handbook; vol. 1. NY, London, Interscience, 1963. xiii, 800p, illus. 165s.

B Deals with the history of the wool industry, methods of production, and properties of wool and hair fibres. (Vol. 2 will deal with textile processing.)

BRITISH WEED CONTROL COUNCIL

666

Crop production in a weed-free environment. Number 2, proceedings of the third symposium of the British Weed Control Council. Oxford, Blackwell Scientific Publications, 1963. vi, 114p, plates, tables, diagrs. 25s.

B Thirteen specialist contributors assess the consequences for crop production now that chemicals alone can often secure complete control of weeds. This third symposium appears as Number 2 in the series because the proceedings of the first symposium were not published.

FELTWELL, R.

667

Turkey farming. Faber, 1963. 339p, illus. 36s.

B Comprehensive book on turkey farming for all-the-year-round production in commercial numbers and at reasonable prices for the consumer.

GREAT BRITAIN. Ministry of Agriculture, Fisheries and Food. National Agricultural Advisory Service

668

National livestock breeding conference, Harrogate, 7, 8 and 9 November, 1962. HMSO, 1963. iv, 103p, 15s.

A Full texts of the four main papers given at the conference and of the final summing up by Dr Alan Robertson, with abridged reports of the beef, dairy cattle, and sheep panels, and summarized versions of the discussions.

65 Business Techniques. Management. Communication and Transport

GREAT BRITAIN. Ministry of Transport

669

Report of the Traffic Signs Committee, 18th April 1963. HMSO, 1963. v, 146p, illus, tables. 15s.

A-B Complete report of Worboys Committee set up to review existing traffic-sign system in the U.K. and to make recommendations for changes considered necessary. The report has been accepted in principle by the Minister of Transport and is an essential book of reference.

HAIGHT, F. A.

670

Mathematical theories of traffic flow. NY, London, Academic P, 1963. xi, 242p, tables, diagrs, refs, bibliog. 72s.

B-C Treatment of road traffic emphasizing queuing theories and probability. It deals mainly with characteristics of traffic, arrangement of vehicles on the road, delay and behaviour on two-lane and multi-lane roads. Many references.

66 Chemical Technology

BEKE, B. and TAMAS, F. *eds*

671

Proceedings of the sixth conference on the silicate industry, Budapest, October 1961. Budapest, Akademiai Kiado, 1963. [distr. Collet's] 469p, illus, tables, diagrs, refs. 87s 6d.

C Collection of over forty papers covering various aspects of the ceramic industries, about two-thirds of the papers actually dealing with silicon-containing materials. Amongst the subjects considered are: crushing and grinding, refractories, cements, titanates, uranium dioxide ceramics, applied and fundamental studies on glasses.

DANIEL, A. R.

672

Bakery materials and methods. Maclaren, 1963. 496p, illus. 50s.

B This book on breadmaking and confectionery, intended for members and students in the bakery industry, has been completely revised in view of the recent great technological advances in the industry.

GALKIN, N. P., MAIOROV, A. A., VERYATIN, U. D.

673

Technology of the treatment of uranium concentrates. Tr. from the Russian by R. D. M. Hegarty.

C This monograph gives a fairly detailed account of the chemistry of uranium extraction technology from concentration of ores to metal production. Much of the Russian work referred to is appearing in English for the first time but there is no undue emphasis on Russian work: advances in other countries are fairly reviewed. The book will prove useful to research workers.

67/68 Manufactures

LYONS, W. J.

674

Impact phenomena in textiles. Cambridge (Mass), M.I.T. P, 1963. xi, 180p. 45s. *M.I.T. Press monographs.*

C Survey of developments in the textile industry during the last fifty years. Examines production techniques and includes an appraisal of the literature.

SIMKIN, D. J. *ed.*

675

Applications of plastic materials in aerospace. NY, American Institute of Chemical Engineers, 1963. vi, 119p, illus, tables, diagrs, refs. \$15; \$3.50 (members of the A.I.C.E.). *Chemical engineering progress symposium series, vol. 59, no. 40. Paperback.*

C Papers cover the ablative properties of plastics and the theoretical interpretation of ablation, the use of reinforced plastics as structural materials, fire resistance, the behaviour of plastics in space environments. The information would be useful for other high-duty applications.

69 Building Industry

WEST, H. W. H.

676

Layout of brickworks. Brick Development Association, 1963. 91p, illus. 15s 6d.

B Second volume in a series of monographs dealing with the main aspects of the production of building bricks. This volume deals with the layouts of works for producing bricks by the various processes. Recommended to those in the industry and also to students.

7 THE ARTS

77 Photography

ADAMS, A.

677

Polaroid land photography manual. A technical handbook. NY, Morgan & Morgan, 1963. 207p, illus, plates, tables, diagrs. \$5.95.

A The Polaroid Land Camera produces a positive print direct from the camera. The manual covers all aspects of its use, from amateur photography to special scientific and technical purposes.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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Preface

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01 BIBLIOGRAPHY

LIBRARY OF CONGRESS

678

List of geographical atlases in the Library of Congress. Vol. 6, titles 7624-10254. Comp. by C. E. LeGear. Washington, Library of Congress, 1963. lxxii, 681p. Superintendent of Documents, Government Printing Office, Washington 25, D.C. \$5.25.

D The second supplement to the basic 1909-20 bibliography, this work covers over 2,500 atlases received between 1920 and 1960, including some 800 oriental publications. Arrangement is by continent and country, with an author list and an index.

02 Librarianship

INTERNATIONAL ASSOCIATION OF MUSIC LIBRARIES.

679

United Kingdom Branch

Gramophone record libraries: their organization and practice. Ed. by H. F. J. Currall. Crosby Lockwood, 1963. x, 183p, plates, tables. 28s.

B This collection of essays, slanted towards public libraries, whilst varying in quality, gives ample information, including basic stock list, list of reviewing periodicals, and a useful bibliography, to enable the novice to justify, set up, and run a record library. Some costs need adjusting to 1963 figures and the treatment of speech records is sketchy, but as the only available work in the field it can be recommended as an indispensable tool to all libraries.

5 MATHEMATICS AND NATURAL SCIENCES

CROMBIE, A. C. *ed.*

680

Scientific change: historical studies in the intellectual, social, and technical conditions for scientific discovery and technical invention, from antiquity to the present. Symposium on the history of science, University of Oxford, 9-15 July, 1961. ©Heinemann, 1963. xii, 896p. 5 gns.

C Proceedings of a symposium under the auspices of the International Union of the History and Philosophy of Science: twenty-nine papers with commentaries and discussions.

GARRETT, A. B.

681

Flash of genius. Princeton (NJ), London, [etc], Van Nostrand, ©1963. x, 249p, diags, tables. \$6.50; 30s.

A Fifty-one thumb-nail sketches of how major scientific discoveries were made. Written for students and would be useful in adult education in science.

HENDERSON, I. F. *and* HENDERSON, W. D.

682

Dictionary of biological terms: pronunciation, derivation, and definition of terms in Biology, Botany, Zoology, Anatomy, Cytology, Genetics, Embryology, Physiology. 8th ed. by J. H. Kenneth. O & B, 1963. xvi, 640p. 2 gns.

D New edition of *Dictionary of scientific terms*, 7th ed. 1960, now more correctly titled, including further new words, particularly those used in American books. Pronunciation is shown and there is a useful list of abbreviations.

51 Mathematics

ALDER, B. *and others, eds*

683

Methods in computational physics: advances in research and applications, ed. by B. Alder, S. Fernbach, M. Rotenberg; vol. 1, statistical physics. NY, London, Academic P, 1963. xi, 304p, tables, diags, refs. 80s.

C Major aim of this series is to collect together new methods designed specifically for computer use in the solution of physical problems. Vol. 1 is devoted mainly to aspects of the Monte Carlo method in nuclear physics and statistical mechanics problems. For specialists.

BRAAE, R.

684

Matrix algebra for electrical engineers. Pitman, 1963. xi, 162p, tables, diagrs, bibliog. 30s.

B Discusses first the mathematical features of the various concepts associated with the main subject and proceeds to apply these to practical analyses including electrical networks and Kron's diakoptics. Exercises and problems. Book is for self study from intermediate standard and upwards.

GOODMAN, A. W.

685

Analytic geometry and the calculus. NY, Macmillan, 1963. 770p, tables, diagrs. \$9.95; 75s.

B This book covers the usual material of third-year sixth-form Grammar school work or first-year University in Calculus for Science and Engineering students. It is attractively written and at the level at which the author aims, he is unusually careful in his definitions and proofs.

KELLEY, J. L. and NAMIOKA, I. and others

686

Linear topological spaces. Princeton (NJ), London, [etc], Van Nostrand, 1963. xv, 256p, 62s. *University series in higher mathematics.*

C An account of linear spaces endowed with a topology which makes scalar multiplication and addition continuous. The central notion is that of a convex set and in particular a convex subset of a linear topological space. The kernel of the book is the durability theory which studies a space in terms of its adjoint.

MANSFIELD, M. J.

687

Introduction to topology. Princeton (NJ), Van Nostrand, ©1963. x, 116p. 1 gn. *University series in undergraduate mathematics.*

B There is an increasing tendency for topology to be taught in first-year courses in universities and this book has been written to facilitate this development. In most respects it is admirably suited to its purpose, but in some places the notation is over-indexed for beginners and there is a lack of geometric motivation.

52 Astronomy. Surveying. Geodesy

ALLEN, C. W.

688

Astrophysical quantities. 2nd ed. University of London, Athlone P, 1963. xi, 291p, tables, refs. 3 gns.

C-D Source book of carefully selected data, re-checked and brought up to date for the second edition. The most comprehensive collection of astrophysical data now available.

LOVELL, B. and LOVELL, J.

689

Discovering the universe. Benn, 1963. 136p, illus, tables, diagrs. 25s.

A Simple introduction to modern astronomy for the general reader. It deals particularly with the recent discoveries which have been made by the use of radio telescopes, satellites, and space probes.

PALMER, H. P. and others, eds

690

Radio astronomy today: papers, designed to present radio astronomy in all its aspects, given at the Jodrell Bank Summer School, 1962. Ed. by H. P. Palmer, R. D. Davies, and M. I. Large. Manchester, Manchester UP, ©1963. viii, 242p, tables, diagrs, refs. 32s 6d.

C Twenty papers constituting an authoritative introduction to the subject for physicists, astronomers, and other scientists.

53 Physics

DAVIES, M. ed.

691

Infra-red spectroscopy and molecular structure: an outline of the principles. Amsterdam, London, Elsevier, 1963. xiii, 468p, tables, diagrs. 75s.

B-C International expert authors describe in thirteen chapters the experimental techniques of general and low-frequency infra-red and of Raman spectroscopy, the theory and principles underlying the infra-red spectra of simple molecules, the study and use of these spectra of various kinds of complex molecules, quantitative studies of dipole and dispersion property of hydrogen bonding, and infra-red emission spectra. Selected references are included.

- KERKER M. *ed.* 692
ICES electromagnetic scattering: Proceedings of the Interdisciplinary Conference held at Clarkson College of Technology, Potsdam, N.Y., August 1962. Edited by Milton Kerker. Oxford, NY, [etc], Pergamon P, 1963. xii, 592p, illus, tables, diagrs. 140s. *International series of monographs on electromagnetic waves.*
C International collection of forty specialized papers on different aspects of scattering by single particles, light scattering in the atmosphere and in space, microwave and radiowave scattering in the atmosphere, light and X-ray scattering in liquids and solids, and the theory of multiple scattering. Not a textbook, but a valuable reference work.
- KOGAN, V. I. and GALITSKIY, V. M. 693
Problems in quantum mechanics. Tr. from the Russian. Ed. by H. Gersch. Englewood Cliffs (NJ), Prentice-Hall, ©1963. 68s.
B Suitable supplement to a first course in non-relativistic quantum mechanics. It contains some 160 problems with complete solutions, more emphasis being on the detailed mathematics rather than the underlying physical principles.
- KRASOVSKII, N. N. 694
Stability of motion: applications of Lyapunov's second method to differential systems and equations with delay, tr. by J. L. Brepner. Stanford (Calif), Stanford UP; [London, OUP], 1963. vi, 188p, bibliog. 48s.
C Rigorous discussion of general theorems and some applications, using powerful modern methods, by an outstanding worker in this field, of great value to those beginning research.
- LAURMANN, J. A. *ed.* 695
Rarefied gas dynamics: proceedings of the third international symposium on rarefied gas dynamics, held at the Palais de L'UNESCO, Paris, in 1962. NY, London, Academic P, 1963. 2 vols. xvi, 541p; xvi, 529p; illus, diagrs, tables. \$16 per vol.
C The two volumes comprise some fifty-five papers describing current research ranging from theoretical studies based on the Boltzmann equation to experimental work on such topics as surface interactions, molecular beams, and transition flows. The volumes are of undoubted value to the research worker in the field of rarefied gas flow.
- METCALFE, F. and TAYLOR, H. M. 696
Applied thermodynamics for Higher National Certificate and Diploma students. Cassell, 1963. xi, 476p, illus, diagrs, tables. 30s.
B Textbook for engineering students and a very sound one too. Fundamental principles, "classical" steam plant, and the more modern gas turbines, etc., are very well dealt with. Strongly recommended.

54 Chemistry

- BUNTON, C. A. 697
Nucleophilic substitution at a saturated carbon atom. Amsterdam, London, Elsevier, 1963. ix, 172p, tables, diagrs, bibliog. 40s. *Reaction mechanisms in organic chemistry, monograph no. 1.*
B-C Authoritative, concise, selective account describing the mechanisms of nucleophilic substitution, and the effects of it on structure, stereochemistry, solvents, salts, and the effect of electrophilic catalysis on such substitutions. Numerous selected references. Valuable for teachers, final-year degree students, and research workers in organic chemistry.
- BANTHORPE, D. V. 698
Elimination reactions. Amsterdam, London, Elsevier, 1963. viii, 215p, tables, diagrs. 45s. *Reaction mechanisms in organic chemistry, monograph no. 2.*
B-C Authoritative, selective, lucidly written monograph suitable for teachers, final-year degree students and research workers in organic chemistry. The well-documented account of general mechanisms of elimination reactions, the influence on them of environmental factors, and of orientation rules is followed by a number of chapters describing particular types of such processes.
- BLAEDEL, W. J. and MELOCHE, V. W. 699
Elementary quantitative analysis: theory and practice. 2nd ed. NY, [London], Harper & Row, 1963. xi, 964p, tables, diagrs, refs. 73s.
B This second edition has new sections on complexometric and potentiometric titrations, and retains the detailed consideration of the basic processes, theory, and mathematical background of quantitative analysis which has proved valuable to teachers and students.

SEEL, F.

700

Atomic structure and chemical bonding: a non-mathematical introduction, tr. from 4th German ed. and rev. by N. N. Greenwood and H. P. Stadler. London, Methuen; NY, Wiley, © 1963. vii, 112p, diags, bibliog. 15s.

B Intended to be concise, straightforward introduction to modern theory of chemical bonding for students. Subject matter is divided into four basic types of chemical bonding—ionic, covalent, metallic, and intermolecular, and treatment relies on use of pictorial models.

55 Geology. Meteorology

COULOMB, J. and JOBERT, G.

701

Physical constitution of the earth. Tr. and rev. ed. O & B, 1963. xi, 328p, illus, tables, diags, refs. 50s.

A-B This is a comprehensive descriptive book on the principal aspects of earth geophysics including seismology, gravity field, geomagnetism, composition, and temperature of the earth. It is valuable general reading but at times specialized pronouncements are made with inadequate explanation.

FLEAGLE, R. G. and BUSINGER, J. A.

702

Introduction to atmospheric physics. NY, London, Academic P, 1963. xi, 346p, tables, diags, refs. \$12.

B Very broad introduction to the subject, covering all aspects, including the ionosphere, and their inter-relationship with each other. Topics treated include gravitational effects, properties of the gases and cloud particles, solar and terrestrial radiation, and geomagnetic phenomena. Each chapter concludes with a good bibliography and an ample set of problems, without solutions.

GASSMANN, G. J. ed.

703

Effect of disturbances of solar origin on communications: papers presented at the symposium of the Ionospheric Research Committee, AGARD Avionics Panel, Naples, Italy. Oxford, NY, [etc], Pergamon P, for the Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization, 1963. x, 349p, illus, tables, diags, refs. 100s. *Agardograph* 59.

C Collection of some two dozen papers of which over half emanate from the USA and these tend to give only American references. However, the other contributions are less parochial and much solar research is recorded. An indispensable addition to propagation research libraries.

57 Anthropological and Biological Sciences

BIEK, L.

704

Archaeology and the microscope: the scientific examination of archaeological evidence. Lutterworth P, 1963. 287p, plates, tables, diags. 45s.

A-B Personal impression by the Head of the Ancient Monuments laboratory of the Ministry of Public Works, of the relationship between the scientist and archaeologist as interpreters of archaeological evidence; based chiefly on material obtained from excavations in Great Britain.

DARLINGTON, C. D. and BRADSHAW, A. D.

705

Teaching genetics in school and university. Edinburgh, London, O & B, 1963. x, 117, [4]p, plates, tables, diags, refs. 1 *gn*.

B A book for specialists in genetics to guide them in planning courses for those biological students who are not destined to be geneticists but who must have a basic knowledge of genetics included in their courses.

FISHER, Sir R. A. and YATES, F.

706

Statistical tables for biological, agricultural, and medical research. 6th ed. rev. and enl. O & B, 1963. x, 146p, tables. 30s.

D New edition of these celebrated and virtually indispensable tables contains additional items and extensions to others as well as an expanded treatment for parts of the valuable forty-page introduction.

SOTTYS, M. A.

707

Bacteria and fungi pathogenic to man and animals. London, Baillière, Tindall & Cox, 1963. vii, 540p, illus. 4 *gns*.

B Comparative textbook on pathogenic organisms, their structure, properties, and behaviour, and the response to them of the invaded hosts.

STANIER, R. Y. *and others*

708

General microbiology. By R. Y. Stanier, M. Doudoroff, and E. A. Adelberg. 2nd ed. Macmillan, 1963. xiii, 753p, illus, tables, diags, index. 50s.

B Popular undergraduate textbook, rewritten to incorporate much new material, some of it not strictly micro-biological but providing useful background. Taxonomy, genetics, and host/parasite relationship occupy nearly half the pages, but no major aspect of pure or applied microbiology is entirely neglected.

58 Botany

SALISBURY, F. B.

709

Flowering process. Oxford, NY, [etc], Pergamon P, 1963. xii, 234p, plates, tables, diags, bibliog. 50s.

B Study at graduate level of the physiology of flowering and its ecological relationships. Principle topic: the influence of the day-length on the flowering process.

59 Zoology

ARTHUR, D. R.

710

British ticks. Butterworth, ©1963. ix, 213p, illus, diags, tables. 55s.

C This book is a compilation of information on all species of British ticks from the stand-points of their anatomy, biology, distribution, and host data. Detailed keys for the identification of all stages in the life cycle are given. There is a bibliography of more than 200 references.

BROADHURST, P. L.

711

Science of animal behaviour. Penguin, 1963. 143p, plates, bibliog. 3s 6d. *Pelican original A629*.

A Balanced and concise introduction to work on animal behaviour carried out by psychologists, zoologists, and others, with sections on methods and purposes.

6 APPLIED SCIENCES**62 Engineering and Technology****621.3 Electrical Engineering**

712

BIBLIOGRAPHY ON MASERS, 1960-1961: microwave amplification by simulated emission of radiation and related paramagnetic devices. Bound Brook (NJ), Literature Service Associates, 1962. [53p]. \$8.25. *LSA monograph no. 7*.

C Covers English language and foreign literature very fully. Entries are alphabetical by title, and keywords are underlined for rapid searching. An author index is provided. 552 references.

GOLDING, E. W. *and* WIDDIS, F. C.

713

Electrical measurements and measuring instruments. 5th ed. Pitman, 1963. xv, 952p, illus, tables, diags. 50s.

B Extensive revision of the previous edition, now in the m.k.s. system of units and brought thoroughly up to date. Discusses the theoretical and practical features of all branches of electrical and magnetic measurements. Contains 118 examination questions with answers. For students, and covers syllabuses of the B.Sc.(Eng.), IEE, and Dip. Tech.

LYNN, J. W.

714

Sensors in electrical engineering. Arnold, 1963. x, 216p, tables, diags. 52s 6d.

B Concise and practical exposition of the tensor analysis of rotating electrical machines with special reference to laboratory equipment. For post graduates, lecturers, research workers, and others interested in machine design and analysis.

RYCHTERA, M. *and* BARTAKOVA, B.

715

Tropicproofing electrical equipment, [tr. by A. Jappel, authorized Englished. by K. Barton and Z. Rudinger]. London, Leonard Hill; Prague, SNTL-Publishers of Technical Literature, 1963. xvi, 454p, plates, illus, tables, refs. 6 gns.

B An extremely comprehensive volume on the design, protection, and testing of electrical materials, components, and equipments for use under a wide range of climatic environments, predominantly tropical. Useful comparisons of results of actual conditions and simulated tests—very extensive bibliography.

716

TECHNICAL DICTIONARY of radio and telecommunication installations. English—German—French—Russian. [Comp. by] H. Plohn with W. Preikschat and M. Schwertner. Oxford, NY, [etc], Pergamon P, ©1963. 1001p. 200s.

D Four separately arranged alphabetical lists of about 12,000 terms used in the field indicated in the title, but interpreted broadly. Bare equivalents are given in each of the other three languages, with genders for nouns.

621.6 *Fluid distribution. Pipes. Pumps*

621.7 *Workshop Practice*

JONES, J. W.

717

CO₂ Welding for pipeline construction. Temple P, ©1963. vii, 54p, illus, tables, diags. 15s.

B Practical manual including discussion of the general aspects of this revolutionary new process, its application to pipeline welding, layout, and organization of a working pipeline spread, testing and inspection, and an estimate of its economic advantages. For pipeline engineers and welding operators.

NORRIE, D. H.

718

Introduction to incompressible flow machines. Arnold, 1963. xviii, 150p, tables, diags, refs. 20s.

B Elementary description of theory and performance of rotodynamic and positive displacement fluid machinery. Much of the material has been extracted from existing literature but the book, nevertheless, provides a convenient short introduction to the subject for first-year college students.

622 *Mining*

MCADAM, R.

719

Colliery surveying. 2nd ed. O & B, 1963. ix, 203p, illus, tables, diags. 30s.

B Useful introduction to the principles of land and colliery surveying for students of mining and surveying, containing carefully selected examples and an adequate number of review questions.

624 *Structural Engineering*

NEAL, B. G.

720

Plastic methods of structural analysis. 2nd ed. C & H, 1963. xiii, 358p, diags, refs. 45s.

B-C The book deals with the application of plastic theory to structures of steelwork. After expounding basic hypotheses and developing simple theorems the author clearly explains their use in various methods of design. Each chapter has an extensive bibliography and a selection of examples.

SALVADORI, M. and HELLER, R.

721

Structure in architecture. Englewood Cliffs (NJ), Prentice-Hall, ©1963. Diags. 4 gns.

B The principles of architectural structures, including recent developments in space-frames, shells, and cable and pneumatic systems are simply and graphically explained, without mathematics, by the Professor of Civil Engineering and Architecture at Columbia University and his deputy, an expert in visual aids. Bridging the gap between the architects' and engineers' viewpoints, this authoritative book deserves wide study.

WALLEY, F.

722

Progress of prestressed concrete in the United Kingdom. London, Prestressed Concrete Development Group, [1963]. 36p, illus, tables, diags, refs. *gr. Paperback.*

B Survey of developments in the materials, structural properties, and applications of prestressed concrete during the last ten years. A paper given by the Superintending Structural Engineer, Ministry of Public Building and Works to the Institution of Civil Engineers.

63 *Agriculture. Forestry. Livestock. Fisheries*

INSTITUTE OF ECONOMIC AFFAIRS

723

Farming for consumers, by G. Hallett and G. James. The Institute, 1963. 60p, tables, refs. 6s. *Hobart paper 22.*

B Both authors are sound agricultural economists, together having Oxford and Cambridge backgrounds and until recently collaborating at Aberystwyth. Production, processing, and marketing are reviewed as an integrated activity, from farmer to customer. Marketing efficiency; boards and their value; density and size of farms; and effective farming policy are the main topics discussed. References given in footnotes, and listed separately, include books, journal articles, and official reports—mostly of the last decade.

65 Business Techniques. ManagementBLAKE, R. P. *ed.*

724

Industrial safety. 3rd ed. Englewood Cliffs (NJ), Prentice-Hall, ©1963. ix, 405p, tables. \$7.95; 64s.

C Useful in that it details American practice: author was with the National Bureau of Standards.

BRINK, E. L. *and* KELLEY, W. T.

725

Management of promotion: consumer behavior and demand stimulation. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xiii, 417p, illus, tables, diagrs. 68s.

B This book is an excellent example of the inter-disciplinary approach to marketing. It examines the basic principles which underline promotional strategy, including the historical development and the application of the behavioural sciences to the task of promotion, and economic, moral, and ethical aspects of promotional activities. The argument is well illustrated with examples drawn mainly from the USA marketing field.

LESOURNE, J.

726

Economic analysis and industrial management. Tr. from the French. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xxii, 631p, tables, diagrs; bibliog. 80s. *Prentice-Hall International series in management.*

C Study of mathematical and statistical techniques relevant to decision-making in business: its scope is comprehensive and the discussions are exhaustive. The book is unlikely to be of much value to the general reader, since it progresses rapidly from simple to complex concepts and a fairly high standard of mathematical competence is assumed. Unfortunately the translation is indifferent in quality and the standard of writing is low: these two shortcomings make the book more difficult than it might otherwise be. At the advanced level, however, the book is of considerable value and it performs a useful function in bringing together the various models and techniques to provide a systematic account of the economic aspects of business decisions.

MUTH, J. F. *and* THOMPSON, G. L. *eds*

727

Industrial scheduling. Englewood Cliffs (NJ), Prentice-Hall, ©1963. xviii, 387p, tables, diagrs, bibliog. 72s. *Prentice-Hall International series in management.*

C Collection of twelve papers presented at a Conference in 1961 at the Carnegie Institute of Technology, together with some additional material. It presents a good picture of the latest work being done in leading industrial and academic centres in the field of industrial scheduling, including a valuable section on the scheduling of complex industrial activities.

THOMAS, P. G.

728

Modern retailing techniques. Macdonald and Evans, ©1963. ix, 191p, illus, tables, diagrs. 17s 6d.

B This book comes at a most opportune time. The past few years have seen very rapid developments in self-service and supermarket selling. At the present moment, interest in trading stamps, and the activities of consumer groups and associations are at their height. For the student, the book provides a most valuable summary of recent developments in retail business—a subject hitherto not too well documented as far as *British* practice is concerned. The chapters on 'Sales Promotion', 'Personal Selling', and 'The Retailer, the Consumer, and the Law' are particularly useful. The book could be read also with value by the small retailer himself, and by the more discerning consumers and their associations.

WINGATE, J. W. *and* FRIEDLANDER, J. S.

729

Management of retail buying. Englewood Cliffs (NJ), Prentice-Hall, 1963. ix, 420p, tables. 64s.

B This is a completely revised edition of a standard American work on the principles and methods of retail buying. Beginning with a thorough examination of the buying function, it goes on to describe how consumer demand can be determined and how to select appropriate sources of supply and to negotiate prices. It will prove valuable to professional buyers and to students of retailing.

66 Chemical Technology

GREEN, D.

730

Understanding pottery glazes. Faber, 1963. 128p, illus, plates, tables. 28s.

A Useful book for the studio potter with no scientific knowledge; of little value to the ceramic technologist.

MUCKLE, W.

731

Design of aluminium alloy ships' structures. Hutchinson, 1963. 264p. 3 gns.

C Published under the auspices of the Aluminium Development Association, this book brings together the results of recent development work in many types of aluminium alloy for marine use. Dr Muckle himself has been prominent in this study.

PATTON, F. S. and others

732

Enriched uranium processing. By F. S. Patton, J. M. Googin and W. L. Griffith. Oxford, NY, [etc], Pergamon P, 1963. viii, 282p, illus, tables, diagrs, bibliog. 70s. *International series of monographs on nuclear energy*.

B For readers new to the subject, actively engaged technical personnel, and other specialists. Emphasis is on practical application; details of manufacture of specific fuel elements for well-known reactors have been excluded. Includes chapters on radiation safety, economics, and management.

67/68 Manufactures**681 Precision Mechanisms**

CRAIG, A. S.

733

Rubber technology: a basic course. O & B, © 1963. xvi, 222 p, illus, plates, tables, diagrs. 2 gns.

A Elementary but comprehensive textbook for students preparing for the examination in 'Rubber Workshop Practice', and others wishing to be introduced to rubber technology.

734

ELECTRONIC data processing symposium, Olympia, London, 4th-6th October, 1961. Pitman, 1963. x, 606p, tables, diagrs, refs. 75s.

C The state of the art of applying computers to business problems, as it was in mid-1961 or earlier, is still required reading for business executives contemplating the use of computers.

INSTRUMENT SOCIETY OF AMERICA

735

Analysis instrumentation—1963: proceedings of the ninth national analysis instrumentation symposium, held April 29–May 1, 1963 at Houston Texas. Ed. by L. Fowler, R. D. Eanes, and T. J. Kehoe. NY, Plenum P, for the Society, © 1963. x, 261p, illus, refs. \$12.50.

C Offset reproduction of the almost unedited original material has greatly accelerated publication of these papers on present ideas and practice, enhancing their value to designers and users of instruments for analysis both in the laboratory and 'in line' with industrial processes.

LAMBERT, M. comp.

736

Short Russian-English dictionary of terminology used in the Soviet rubber, plastics, and tyre industries. Maclaren, © 1963. [3], 208p. 2 gns.

D Produced as a result of R.A.P.R.A.'s experience in cover-to-cover translating, this book will prove invaluable to Russian translators in the field. The list of abbreviations appended includes both those for organizations and for specified materials.

MONCRIEFF, R. W.

737

Man-made fibres, *formerly* Artificial fibres. 4th ed. Heywood, 1963. x, 742p, illus, tables, diagrs. 70s.

B This established work has again been enlarged to include additional new fibres. Some rearrangement of sections has also been undertaken to allow more logical grouping of fibres which had only minor interest at the time when the third edition went to press.

69 Building Industry

BUILDING RESEARCH STATION

738

Building research 1962: report of the Building Research Board with the report of the Director of Building Research. HMSO, 1963. v, 102p. 8s 6d.

B Summarizes the year's research. In addition to routine investigations, special studies were made of housing, hospitals, large-panel construction, and industrial noise.

7 THE ARTS**77 Photography**

739

PROCEEDINGS of the sixth international congress on high-speed photography. Ed. by J. G. A. de Graaf and P. Tegelaar. Haarlem, Tjeenk, Willink & Zoon, 1963. xxvi, 771p.

C Full papers and discussion at the International Congress held at The Hague/Scheveningen, 17–22 September 1962. Most papers are in English, but a few are in German or French. Résumés in English, French, and German are collected at the end.

Publishers

THE FOLLOWING ABBREVIATIONS ARE USED IN ASLIB BOOK LIST

A & U	Allen & Unwin
B & S	Bailey & Swinfen
C & H	Chapman & Hall
CUP	Cambridge University Press
EUP	English Universities Press
HMSO	Her Majesty's Stationery Office
O & B	Oliver & Boyd
OUP	Oxford University Press
R & KP	Routledge & Kegan Paul
T & H	Thames & Hudson
ULP	University of London Press

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